1899.

ILLUSTRATED CATALOGUE

—AND—

PRICE LIST

—OF—

Nautical & Optical Instruments

MANUFACTURED AND IMPORTED BY

T. S. & J. D. NEGUS,

Chronometer * Manufacturers,

Compass Adjusters,

—AND—

NAVIGATION WAREHOUSE,

140 WATER STREET,

NEW YORK.

COPYRIGHTED, 1899, BY T. S. & J. D. NEGUS.

65

52543

WE issue this Catalogue for our *Patrons*, with the view of aiding them in selecting what they require; but where it is possible we solicit a personal examination of our goods, in order to show their fine quality and workmanship, which can not be thoroughly shown through the medium of a Catalogue.

Although the price of some of our manufactured articles may appear higher than those of other makers, when the quality is considered, they will be found to be lower than anything offered.

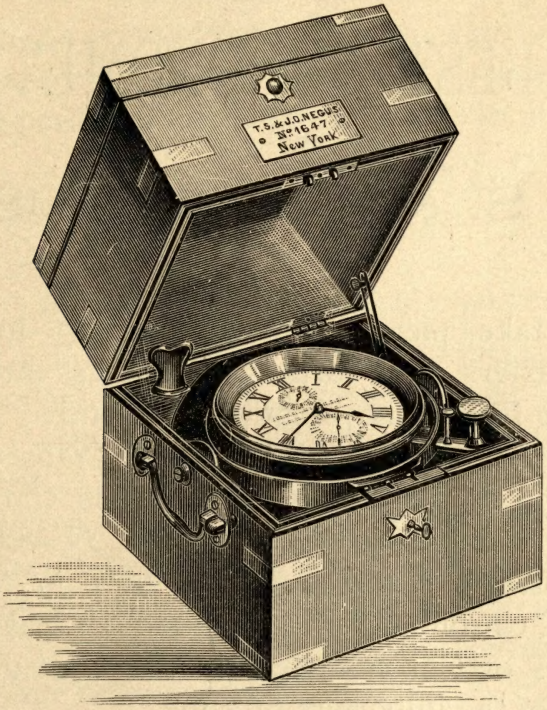
We make a specialty of COMPASS ADJUSTMENT for local attraction, and any adjusting entrusted to us will receive our prompt and careful attention.

In ordering goods, where they are numbered, please give the numbers to avoid mistakes.

Respectfully,

T. S. & J. D. NEGUS.

SMITHSONIAN
FEB 12 1959
LIBRARY



56 hour Chronometer with ordinary Balance. - $250

In addition to our large stock of Chronometers of our own manufacture, we have on hand, at reduced prices, a large assortment of selected Chronometers of English and American manufacture, that have been in service a short time.

We also have selected CHRONOMETERS TO HIRE by month or year.

BREAK-CIRCUIT CHRONOMETERS.

Pamphlets giving description of, and rules for using our Break-Circuit Chronometers can be had upon application.

Break-Circuit Chronometer complete, with Condenser, $425

THE BEST CHRONOMETERS

BY

T. S. & J. D. NEGUS.

WE take pleasure in announcing to Ship-masters, Ship owners, and others interested, that at the recent six months competitive trial of Chronometers, at the U. S. Naval Observatory, Washington, D. C., ending July 1, 1886, Chronometers of our make passed *First, Second, Fourth, Fifth, Seventh, Ninth, Tenth, and Eleventh*, in a list of Forty-five Chronometers submitted for trial by all the makers of Chronometers in the United States, and some of the importers of same.

And that our First and Second Chronometers surpassed our FAMOUS RECORD, received at the previous six months competitive trial ending July 1, 1884, which was: "as surpassing all Chronometers submitted for trial, and all previous records."

Also, that we were the only makers that received the highest premium paid.

The competitive trial was requested by the Chief of Bureau of Navigation for the purpose of obtaining twelve first class instruments for the use of the U. S. Naval Service at sea, and for the purpose of testing the relative merits of Chronometers of various makers.

"For variation of rate at the same and different temperatures; for variation of rate for varying relative humidities, varying from 50 to 90 per cent.; for isochronism; polarity of balance; quality of workmanship, and general performance under different circumstances."

T. S. & J. D. NEGUS.

September 1, 1886.

Again carying off all the honors!

We again take pleasure in announcing that at the competitive trial following the above and ending July 6, 1888, for the purchase of twelve Chronometers for the use of the U. S. Naval Service, Chronometers of our make passed *First, Second, Third, Fifth, Sixth, Eighth, Tenth, and Eleventh,* in a list of Thirty Chronometers submitted for trial by all the makers in the U. S.

And again we were the only makers that received the *highest premium* paid.

T. S. & J. D. NEGUS.

September 1, 1888.

Again!

In the competitive trial of Chronometers ending June, 1891, our Chronometers received both the *First and Second* premiums.

T. S. & J. D. NEGUS.

September 1, 1891.

Something More

—OF—

Interest in regard to Chronometers.

We again beg to announce that at the recent trial of Chronometers at the U. S. Naval Observatory ending May, 1894, our *First* Chronometer surpassed ALL PREVIOUS RECORDS, not omitting our famous record of 1884.

There were twelve Chronometers purchased, and all were of our make. They stood in order of merit as follows:

First,	Negus, .	1786	*Seventh*,	Negus,	1718
Second,	Negus,	1785	*Eighth*,	Negus,	1821
Third,	Negus, .	1772	*Ninth*,	Negus,	1791
Fourth,	Negus,	1782	*Tenth*,	Negus,	1832
Fifth,	Negus, .	1784	*Eleventh*,	Negus,	1830
Sixth,	Negus,	1765	*Twelfth*,	Negus,	1812

September 1, 1894.

T. S. & J. D. NEGUS.

THE HIGHEST PREMIUM

—FOR THE—

Best Made Marine Chronometers.

T. S. & J. D. NEGUS

Take pleasure in informing their patrons aud the public that a medal—the highest premium given—was awarded them at the World's Fair, 1853, for the best made Chronometer, in competition with the English, French, and American exhibitors.

Extract from the Report of Capt. Nares, Commander of the British Polar Expedition to the Lords Commissioners of the Admiralty, in which he makes mention of the excellent performance of a NEGUS Chronometer, No. 1,366, belonging to the American Polaris Expedition, found by him at Newman's Bay, Arctic Regions.

LONDON, *October 31st, 1876.*

* * * * "The lowest temperature observed was 72 degrees below zero of Fahrenheit, or 104 degrees below freezing point. The mean temperature for thirteen consecutive days was 59 degrees below zero, by far the coldest weather ever experienced before, and the mercury was frozen forty-seven days during the winter * * * all the Polaris cairns were visited,—at the boat depot in Newman's Bay a box Chronometer made by NEGUS of New York, No. 1,366, was found, and in perfect order, after an exposure to four winters; it has since been keeping excellent time on board the *Discovery*.

This Chronometer has been returned by the British authorities to our Government, and the rate paper given with it at the Royal Naval College, Portsmouth, December 3, 1876, showed it was going at a rate of one-tenth of a second per day losing, being a very slight change from that given when it was issued to the Polaris Expedition on 28th June, 1871, during four years of which interval it was exposed to the inclemency of Arctic winters at varying temperatures down to as low as 104 degrees below the freezing point, a test unusually severe, and probably no other Chronometer had ever been

exposed to so great a degree of cold, showing clearly that notwithstanding great extremes of temperature—the perfection of our instruments—the metals they are made of—the exact adaptation of their different parts, and the quality of the oil were such, that on being wound up, after having been found by Captain Nares, it started off on a rate of one-tenth (0.1 s.) of a second per day losing, and reported by Capt. Nares as keeping excellent time.

——:o:——

TESTIMONIALS.

These few Testimonials are samples of the many we receive.

Extract of a letter from Prof. WM. HARKNESS, U. S. Navy.

U. S. NAVAL OBSERVATORY,
Washington, D. C., Dec. 30th, 1875.

MESSRS. T. S. & J. D. NEGUS, *New York.*

* * You will doubtless be pleased to learn that the Break-circuit Chronometers of your make which you furnished to the Transit of Venus parties gave perfect satisfaction. After examining the break-circuit mechanism very carefully, I am of the opinion that in simplicity, firmness, durability, ease and accuracy of adjustment, it is by far the best I have ever seen. Were I forced to choose between a Negus Break-circuit Chronometer and a Clock, I would certainly take the former, because it can be used any where, while a clock is only available when mounted upon a firm and massive support.

I remain, yours very truly,
[*Signed,*] WM. HARKNESS.

Copy of a letter from PROF. HENRY DRAPER.

OBSERVATORY, HASTINGS ON HUDSON, N. Y.
Oct. 3, 1876.

MESSRS. T. S. & J. D. NEGUS.

Gentlemen:—I have had the two Chronometers you furnished me with in use for more than two years, and they have given entire satisfaction, being exceedingly reliable in their rate, and much better than one of the transit of Venus clocks which I have here. As to the break-circuit Sidereal Chronometer, it seems to leave nothing to be desired. Not only is its rate exceedingly steady, but also the electric part is excellent. I have never known it to miss a beat, and since you suggested the use of a relay, it gives such regular marks on the Chronograph Sheet that I can suggest no improvement.

My Chronograph is about 400 feet from the Chronometer, the two being connected by an underground cable, but this in no way deteriorates from the performance of the break-circuit. Although my clock could be readily attached to the Chronograph, the Chronometer works so well, that I do not expect to connect the clock at all.

Yours truly,
[*Signed,*] HENRY DRAPER, M. D.,
Prof. Analytical Chemistry,
University of City of New York.

A Little Higher in Price, BUT—!

FERRIS
HAMS AND BACON

FURNISHED BY

PARK & TILFORD
ACKER, MERRALL & CONDIT
NEW YORK

THE S. S. PIERCE CO.
THE COBB, BATES & YERXA CO.
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JAMES H. SNOW & CO.
BANGOR

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ARNOLD & MAINE
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NEW BEDFORD

THE "FERRIS" FAMOUS HAMS AND BACON

Our constant aim
is to make them
the Finest in the World

CURED BY

F. A. FERRIS & COMPANY

262, 264, 266, 268, 270 & 272 Mott Street, NEW YORK CITY

DELICACIES

WE PROVIDE FOR CABIN TABLES

Our "Trade-Mark" Hams

"MEDIUM SIZES"

Which will be Delicious Boiled, Broiled, or Fried

AN EXQUISITE RELISH ALSO IS OUR TOOTHSOME

BONELESS BACON

Which may be used to great advantage with
Fish, Flesh, or Fowl

FOR SALE BY
LEADING GROCERS
EVERYWHERE

INSIST
UPON HAVING OUR
BRAND

We Invite Stewards to write us for a copy of our Book of Suggestions

F. A. FERRIS & COMPANY

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TESTIMONIALS, — *continued.*

Extract from a Work published by the Chief of Bureau of Navigation, on the Telegraphic Determination of Longitudes in Mexico and Central America and on the West Coast of South America in 1883—1884, by Lieut. Comdr. C. H. Davis, Lieuts. John Alexander, Norris & Charles Laird, U. S. Navy:

* * * * The time-pieces used by the expedition were four Break-circuit Sidereal Chronometers by Messrs. T. S. & J. D. NEGUS of New York. These instruments, Nos. 1684, 1519, 1254 and 1295, have done all the longitude work in the West Indies, on the East Coast of South America, and in China, India, and Japan, besides being used on this expedition, and have been in continuous use, with but slight intermissions for cleaning and examinations, since 1874. They have given the greatest satisfaction.

(See Hydrographic Office publication No. 76, page 15.)

The rates of Chronometers of most makers are materially altered from exposure to sudden shocks of machinery, thunder, or the concussions of artillery; but these disturbing causes scarcely affect ours, in consequence of the solidity of their construction and fine adaptation of the parts to each other. Some of our instruments were exposed to a severe trial on board the Monitors, and we take pleasure in being able to call the reader's attention to the annexed extract of letter recently received from Rear Admiral DAVIS, U. S. N., in relation thereto:

Extract of letters received from Rear Admiral C. H. DAVIS, U. S. N., Superintendent of the National Observatory at Washington.

"*January 8th, 1868.*

"With reference to the superiority of your Chronometers in maintaining regularity of rate, under the effects of the concussion of heavy ordnance. There are, in addition to No. 1254 of your manufacture, which received a severe trial on board the Monitor '*Montauk*,' Nos. 1103 and 1226 from the Iron Clads '*Miantonomah*' and '*Mahopac*,' 1326 from the '*Seneca*,' wooden gunboat; 1311 from the '*Casco*,' and 1231 from the '*Sopronia*,' which have performed so perfectly that they will be re-issued as first-class instruments.

Respectfully, etc., etc., your obedient servant,

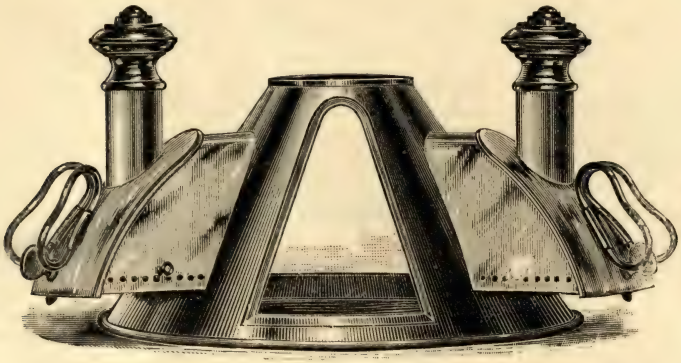
[*Signed,*] C. H. DAVIS,

Rear Admiral and Sup't."

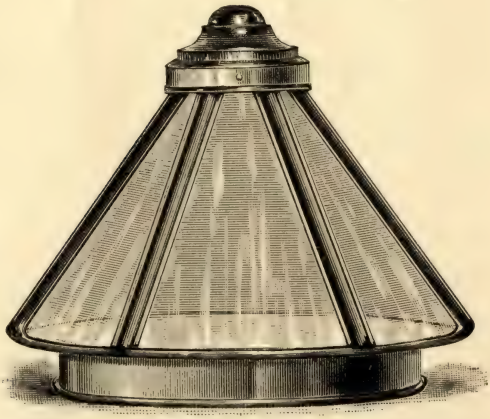
MESSRS. T. S. & J. D. NEGUS.

"NEGUS"

Improved Binnacle Top.



Brass Hood and Lamps for Night Use.



Binnacle Top.

This new style of Top can be made to fit almost any Binnacle.

The Top revolves so that a clear sight can be obtained across the Compass in any direction, to get a bearing.

The Brass Hood and Lamps, as shown in cut, will also revolve on the Binnacle Top.

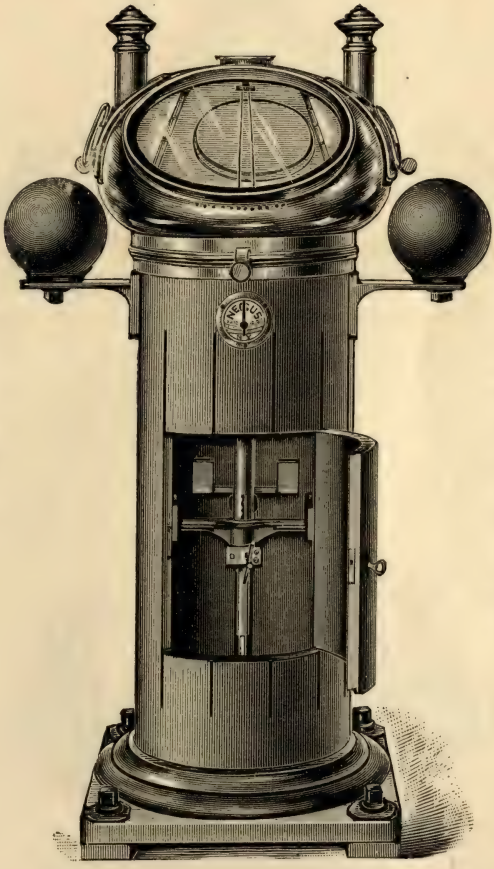
Price according to size and fitting required.

"NEGUS COMPENSATING

Standard Binnacle for Deck.

WOODEN CYLINDRICAL STAND, AND METAL TOP.

We make this style of Binnacle to suit any size of Compass. Call and examine it.



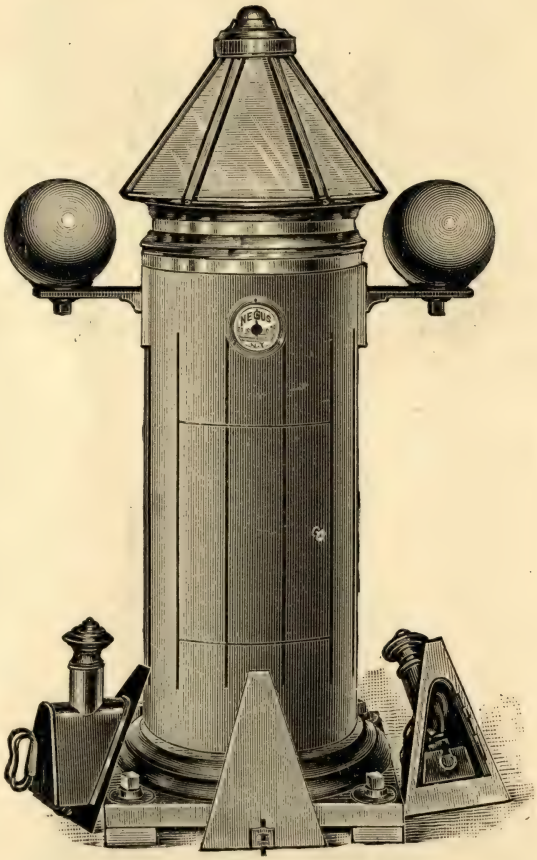
The top or hood revolves on the stand. It has a door in the back and sight wires, by which a bearing can be taken with great accuracy and rapidity.

The system of adjustment for this binnacle is the same as in our metal one. The price is much lower than any other compensating binnacle on the market, notwithstanding the material and workmanship are of the best quality.

Price complete, with Magnet, Compass, Iron Spheres, $150

NEGUS COMPENSATING

Fancy Deck Binnacle for Yachts.



Stand is of finely polished mahogany. All fittings of red metal.

The binnacle top is our improved six-sided pattern, in which the Compass can be seen from all points. Brass plates and lamps (shown at bottom of cut) fit over the glass spaces for night use.

Price complete, with Magnets, Compass, and Iron Spheres, - - - - - - - - - - $200

Made in all sizes. Smaller sizes, lower priced.

"NEGUS"

COMPENSATING BINNACLE.

(PATENT APPLIED FOR.)

Price, complete with Compass, Magnets, and Iron Spheres, **$250.**

Small size for Yachts, $200.

—DESCRIPTION.—

Our Compensating Binnacle (shown in cut) is made entirely of metal, is fitted with the celebrated "Ritchie" Compass made with some slight alterations to meet our views.

The fore-and-aft, and athwartship magnets are fitted in boxes in the bowl of the Binnacle, are raised and lowered independently by means of a key on the outside of column, attached to rack and pinion motion.

After the adjustments are made the key can be removed, and the key-hole closed up, so that it is impossible to have the adjustment tampered with.

This Binnacle will adjust errors from 1° to 90° if necessary, and it places the matter of re-adjustment in so simple a form, that a Ship-master can make any slight alteration with ease, when it is found necessary to do so, either from change of Latitude or from vessel losing some of her magnetism, as generally is the case in a new vessel.

The Binnacle is fitted with Iron Spheres for correction of Quadrantal errors.

Also fitted with receptacle for Flinders Bar, to adjust error due to vertical induction.

The Heeling error Magnet is put in cup in centre of tube, and can be raised or lowered by chain inside of bowl.

The Pelorus, Alidade, or Azimuth Circle can be used in connection with this Binnacle. For quick practical work we recommend the Negus Alidade, as it is fitted on the top directly over the Compass, is always ready at hand, and is strong and durable.

Round magnets, six inches in length, are furnished with the Binnacle, they fit in the cups or boxes inside of the bowl. Each box will hold four of these magnets, if necessary; but for the ordinary errors, one is sufficient. When a magnet is put into one of these boxes it is firm in place and will not shift.

The *North* ends of the magnets are painted *Red* and the *South* ends *Blue*.

—DIRECTIONS.—

First. See that the Binnacle is properly placed on the deck, or bridge, so that the lubber line of the Compass is parallel with the keel of the ship.

Second. Swing the ship so that her head is North (magnetic). If the compass shows *Easterly* error, put the magnet in the twart-ship box with *blue* end to *Port;* but if *Westerly* error is found put magnet in the box with *red* end to *Port.* Then with the key, in the column at lower end of bowl, move the magnet up or down until the compass points same as the ship's head.

Third. Now place the ship's head *East* (magnetic.) If *Easterly* error is shown, place magnets in fore-and-aft boxes with *blue* ends aft. If *Westerly* error is found place magnets in cases with *blue* ends forward.

There are two fore-and-aft boxes, and the same number of magnets should be used in each, same ends forward.

Then using the other key move the magnets up or down, until compass points same as ship's head.

Fourth. The compass having been corrected on N., S., E. and W. courses, put ship's head on N. E., S. E., S.W. or N.W. course, and if error is found move the iron spheres in or out on the brackets until the compass points correctly. If the spheres will not move out far enough, smaller spheres will be furnished, although the eight inch size answers for almost all cases.

The spheres can be clamped to the brackets by means of clamp nut underneath.

Fifth. The heeling error can be determined by heeling the ship, or by an instrument which we have.

T. S. & J. D. NEGUS.

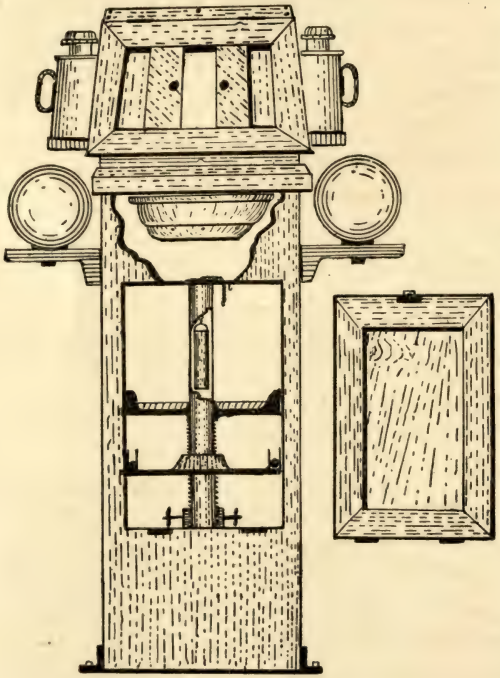
NEGUS'

Wooden Compensating Binnacle.

—FOR—

PILOT HOUSES.

PATENT APPLIED FOR.



Size	to take RITCHIE COMPASS	7 inch card,	Price, $105
"	" " "	8 " "	" 115
"	" " "	9 " "	" 130

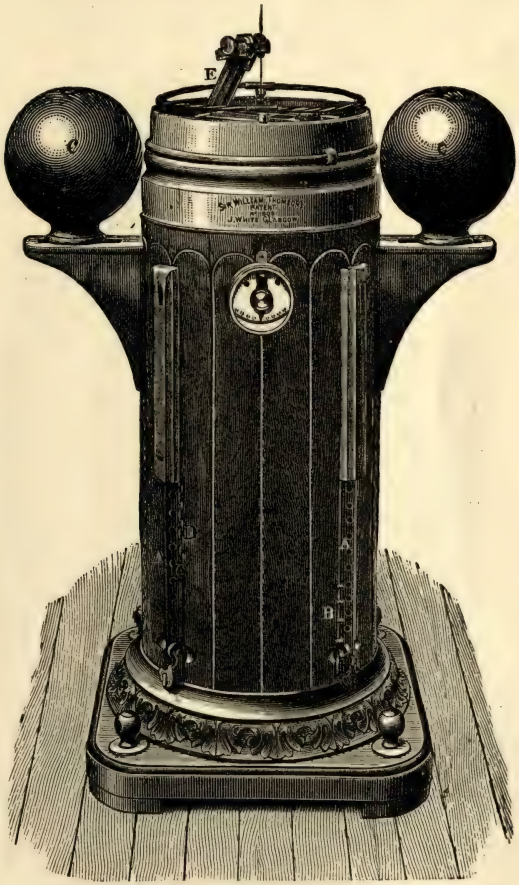
The above prices include the Compasses.

In the ordinary size the Compass stands about 38 inches from Deck, — can be made higher or lower to order.

N. B. The directions for adjusting are the same as in our Metal Compensating Binnacle.

Sir WILLIAM THOMSON'S

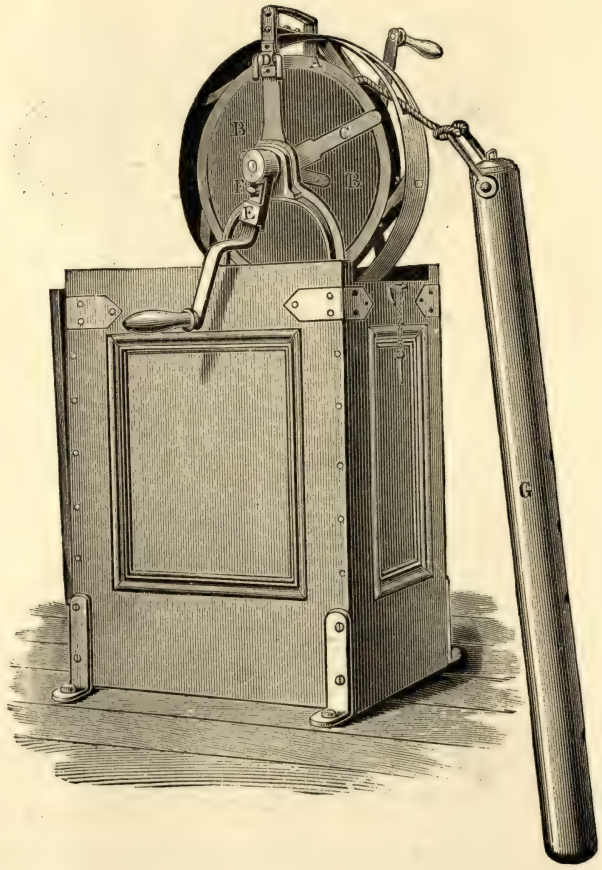
Compensating Binnacle.



Binnacle and Compass, complete, - -	Price,	$275 00
Extra Bowl and Card, with wire ring, - -	"	75 00
Spare Card, - - - - - - -	"	25 00
" Cap for Card, - - - - - -	"	3 50
Azimuth Instrument, - - - -	"	35 00
Spare Point for Card, - - - -	"	1 75

Sir WILLIAM THOMSON'S

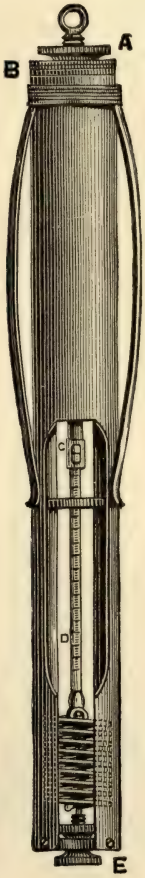
SOUNDING MACHINE.



Sounding Machine, complete, - - -	Price,	$175 00
Extra Glass Tubes, per 100, - - -	"	40 00

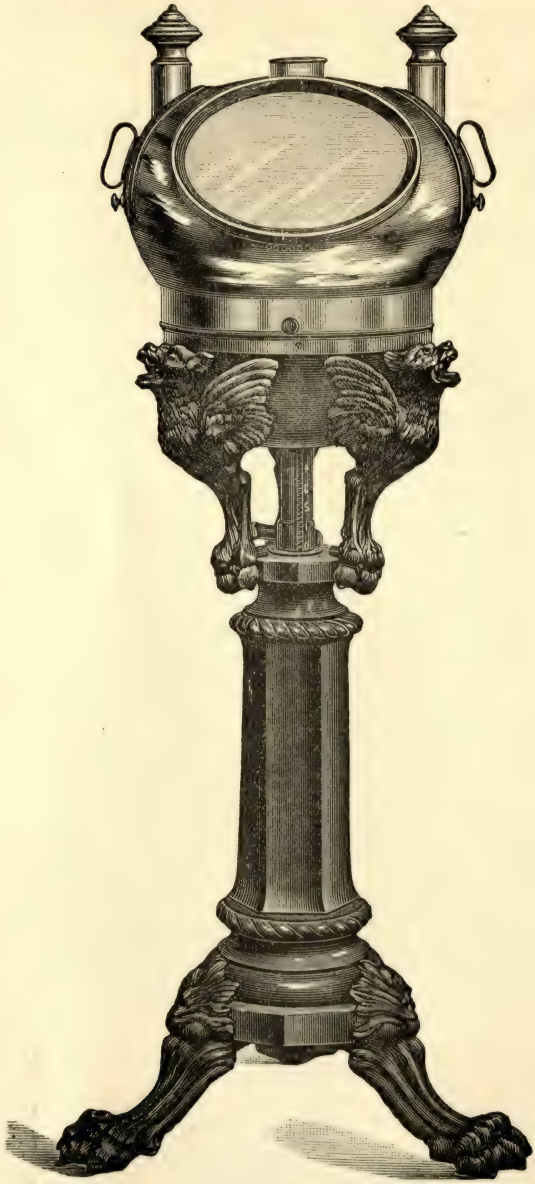
Sir WILLIAM THOMSON'S

DEPTH RECORDER.



Price, $30 00.

STANDARD DECK BINNACLE, NO. 1.



Bronze Stand, Brass Top and Side Lamps. Complete with deck plates, bolts and wrench.

Height 4 ft. 11 in., takes Compass with 9 in. card. **Price, $210.**

NOTE.—Height given for all Binnacles is from deck to top of Lamp Chimney.

STANDARD DECK BINNACLE, No. 2.

Bronze Stand, Brass Top and Side Lamps. Complete with deck plates, bolts and wrench.

Height 4 ft. 11 in., takes Compass with 9 in. card. **Price, $140.**

NOTE.—Prices of Binnacles do not include Compasses.

STANDARD DECK BINNACLE, No. 3.

Bronze Stand, Brass Top, &c. Complete, deck plates, bolts and wrench.
Height 4 ft. 8 in., takes Compass with 9 in. card. **Price, $135.**

For Prices and Sizes of Liquid Compasses see pages 32 and 33.

DECK BINNACLE, No. 9.

This style is made in four sizes.

				PRICE.
No. 7,	Height 3 ft. 6½ in.,	takes Compass with 8 in. card,		$90
" 8,	" 3 " 9½ "	" " " 8 in. "		95
" 9,	" 3 " 10 "	" " " 9 in. "		100
" 10,	" 4 " "	" " " 9 in. "		110

Furnished with deck plates, screws, bolts and wrench.

DECK BINNACLE, No. 11.

SUITABLE FOR YACHTS AND PILOT BOATS.

This style made in three sizes.

		PRICE.
No. 11,	Height 2 ft. 7½ in., takes Compass with 5 in. card,	$59
" 12,	" 3 " 1 " " " " 5½ in. card,	65
" 13,	" 3 " 4½ " " " " 7 " "	85

NOTE.—For Prices and Sizes of Liquid Compasses see pages 32 and 33.

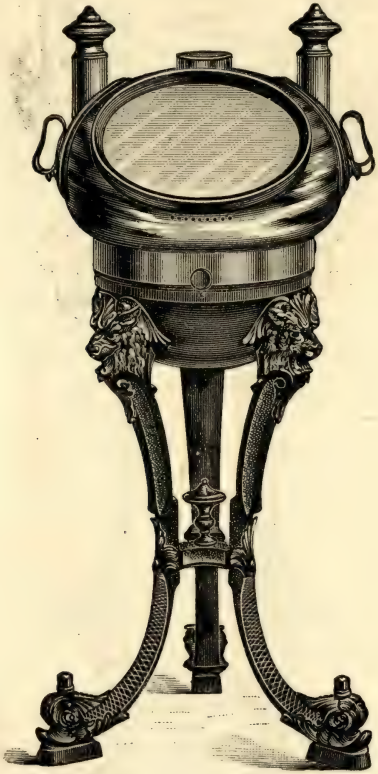
YACHT BINNACLE, No. 14.

Bronze Stand, Brass Top, &c.

Height 4 feet 1 inch, takes Compass 9 inch card. Price, $140

Furnished with deck plates, screws bolts and wrench.

YACHT BINNACLE, No. 15.

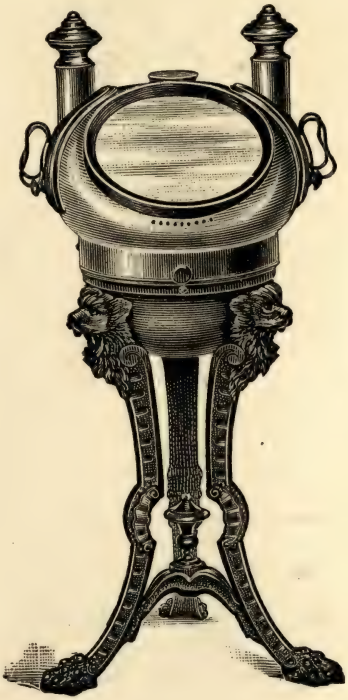


This style made in two sizes.

	PRICE.
No. 15, Height 3 ft. 3½ in., takes Compass with 7 in. card,	$120
" 16, " 3 " 7 " " " " 8 " "	130

Furnished with deck plates, bolts, screws and wrench.

YACHT BINNACLE, No. 18.



	PRICE
Height 2 ft. 10¼ in., takes Compass with 5½ in. card.	$90

Furnished with deck plates, screws, bolts and wrench.

YACHT BINNACLE, No. 19.

Height 2 ft. 7¼ in., takes Compass with 4 in. card, Price, $58

Furnished with deck plates, screws, bolts and wrench.

YACHT BINNACLE, No. 20.

Height 2 ft. 6½ in., takes Compass with 4 in. card, Price, $60

Furnished with deck plates, screws, bolts and wrench.

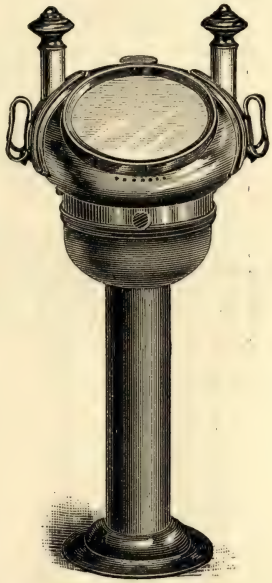
YACHT BINNACLE, No. 21.

This style made in two sizes.

	PRICE.
No. 21, Height 2 ft. 1½ in., takes Compass with 4 in. card,	$45
" 22, " 2 " 3½ " " " " 5 " "	48

Furnished with deck plates, bolts, screws and wrench.

YACHT BINNACLE, No. 23.



This Binnacle is all polished brass, both stand and top.

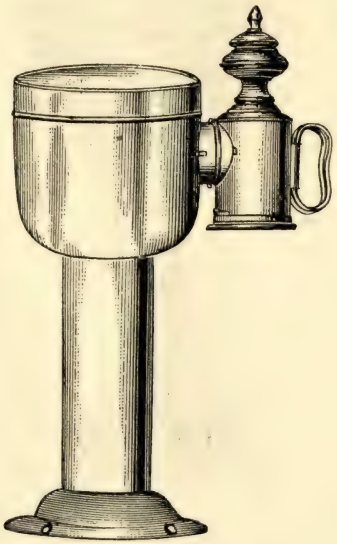
Height 2 ft. 2½ in., takes Compass with 4 in. card. Price, $35

Can be made any height to order, or to take larger Compass, at a ***small*** *additional expense.*

SMALLEST

YACHT BINNACLE MADE,

No. 24.



Height, 15 inches, Price, $20

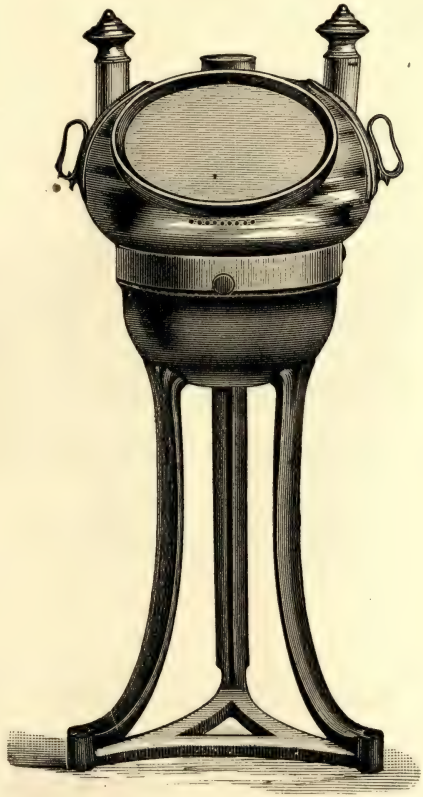
It takes the smallest Liquid Compass with 3-inch card.

Can be made in same pattern for larger Compasses.

N. B.—Prices given for Binnacles do not include Compasses.

PLAIN BINNACLE, No. 28.

SUITABLE FOR PILOT BOATS AND WORKING VESSELS.



Made in four sizes.

Stand is of Brass, painted *Made very solid and substantial.*

				PRICE.
No. 28,	Height 2 ft.	8½ in.,	takes Compass with 5½ in. card,	$65
" 29,	" 3 "	2½ "	" " " 7 " "	75
" 31,	" 3 "	6 "	" " " 8 " "	85
" 32,	" 3 "	10 "	" " " 9 " "	90

Furnished with deck bolts.

PILOT HOUSE BINNACLES.

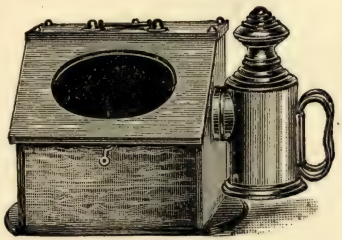
Brass.

Made in six sizes. Brass top, cylinder and flange.

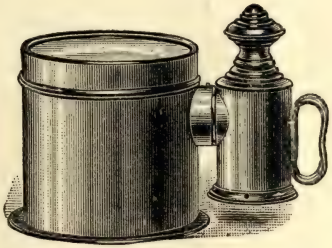
No.	34,	Takes Compass with	3	inch card,	-	-	Price,	$35
"	35,	"	"	"	4	"	"	-	-	"	38
"	36,	"	"	"	5	"	"	-	-	"	42
"	37,	"	"	"	5½	"	"	-		"	45
"	38,	"	"	"	7	"	"	-	-	"	50
"	39,	"	"	"	8	"	"	-		"	55
"	40,	"	"	"	9	"	"	-	-	"	60

BINNACLES

FOR SMALL LAUNCHES AND BOATS.



Mahogany, $10.



Brass, $12.

Liquid Compass, 3 inch Card, to fit either above, $15 extra.
Brass " " " " " " $4 "

The above cuts show our new Binnacles made expressly for small Boats and Naphtha Launches, where there is very little space to carry a compass.

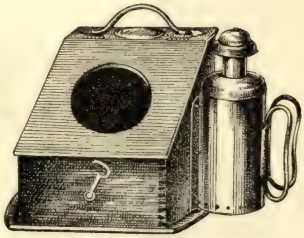
These Binnacles are only six inches in diameter, and carry a new Liquid Compass, the smallest ever made, having a card only three inches in diameter.

The lamp is an entire new pattern, and is made without door or hinges.

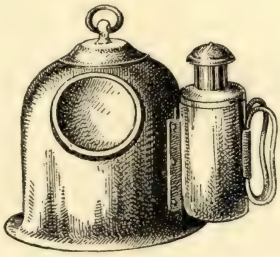
SOMETHING NEW

—FOR—

Small Yachts and Canoes.



4 in. diameter.
Wooden Binnacle with
Lamp $5.



4 in. diameter.
Brass Binnacle with
Lamp $7.

Made in 2 sizes larger, $16, $18

A RELIABLE LIQUID COMPASS TO FIT EITHER BINNACLE, $8.

COMPASS ALONE IN NEAT MAHOGANY BOX, $8.

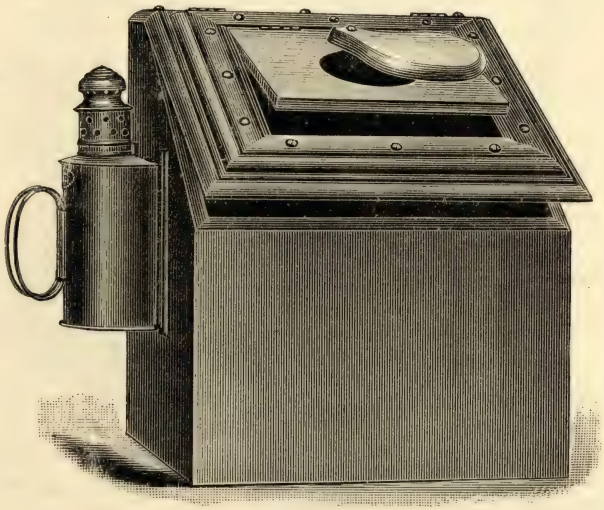
This baby Liquid Compass is very small, having a card 2 inches in diameter, and is steady, perfect and reliable.

Every Yachtsman knows how unsatisfactory a small Dry Compass is, yet the small Liquid Compasses have seemed too expensive for small boats.

We think the new Compass will please in size, price, and performance.

PILOT HOUSE BINNACLES.

MAHOGANY OR WALNUT, WITH BRASS LAMP.



Made in six sizes. Is very neat and finely finished, with best quality lamp.

No.	44,	Takes	Compass	with	4	inch	card,	-	Price,	$12
"	45,	"	"	"	5	"	"	- -	"	15
"	46,	"	"	"	5½	"	"	-	"	18
"	47,	"	"	"	7	"	"	- -	"	18
"	48,	"	"	"	8	"	"	-	"	20
"	49,	"	"	"	9	"	"	- -	"	22

SPECIAL

Mahogany Compensating Binnacle.

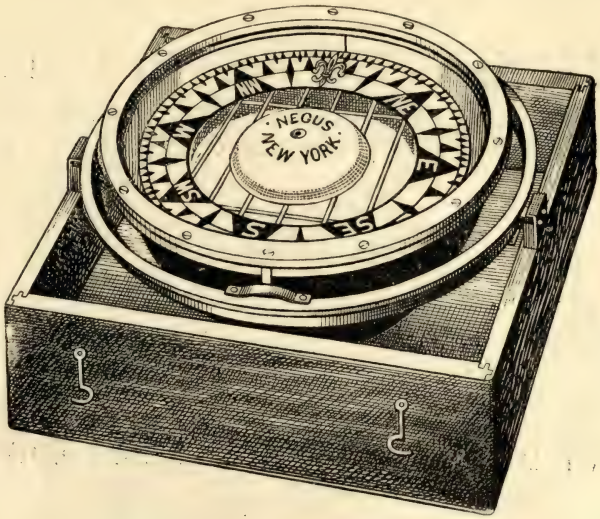
FOR YACHT or CONNING TOWER.

4 INCH COMPASS.

Complete with Magnets and Quadrantal Correctors.

Total height, 10 inches, diameter 7½ inches. The two parts join Making a Neat Compact Binnacle.

Complete with Compensating arrangements, -	Price, $40
" without " " - -	" 30



We wish to call attention to the recent improvement in the celebrated

RITCHIE COMPASS.

The only compass adopted by the U. S. Navy.

This compass has had a reputation for many years that is not equalled by any other Compass.

From our many years experience in handling this Compass, and adjusting it in iron vessels, we have been able to make an improvement, by which it has less errors in iron Vessels, is more easily adjusted, and is quick and steady under all conditions.

These improvements the manufacturer is now embodying in all the Compases made for us.

There are manufacturers who claim that they make a Compass superior to the Ritchie.

These claims are absolutely without foundation, for the Ritchie Compass as we offer it to-day, excells any other Compass in the World for small errors in iron vessels, ease of adjusting, steadiness and quickness under all conditions.

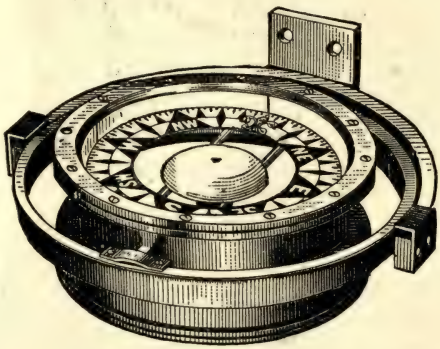
We can prove this by steamers we have adjusted, and we solicit an opportunity to have the Compass tested against any other make.

T. S. & J. D. NEGUS.

RITCHIE LIQUID COMPASSES.

	LIST PRICE.	RETAIL PRICE
No. 0 size, 9 inch Card, 13¾ inch. diam. of Box,	$47.00	$38.00
" 1 " 8 " " 12 " " "	39.00	31.00
" 2 " 7 " " 11 " " "	32.00	26.00
" 3 " 5½ " " 9½ " " "	31.00	25.00
" 4a " 5 " " 8¼ " " "	27.50	22.00
" 4 " 4 " " 7¼ " " "	25.00	20.00
" 5 " 3 " " 6½ " " "	21.00	16.00
" 4 Boat Binnacle Compass. Japanned, with side lamp	40.00	32.00
Baby size, 2 inch Card, 4¼ inch diam., Box,	10.00	8.00

RITCHIE DOUBLE CARD TRANSPARENT COMPASS.



	LIST PRICE.	RETAIL PRICE
7 inch Double Card, diam. of gimbal ring 10¾	$44.00	$35.00
8 " " " " " " 11½	50.00	40.00
9 " " " " " " 12½	53.00	43.00

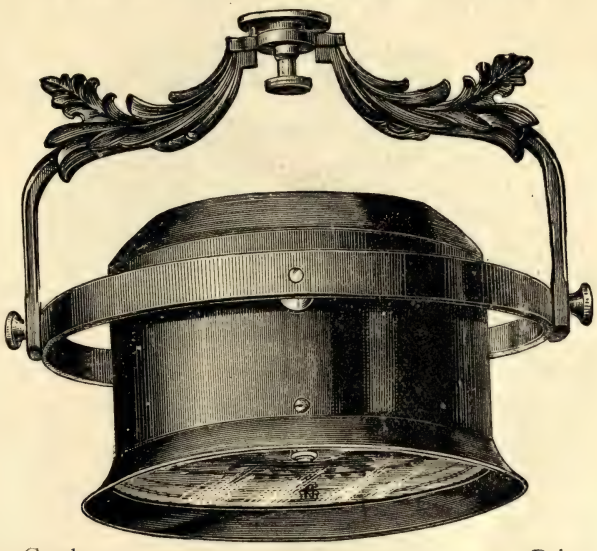
N. B.—This Compass can be read from above or below.

RITCHIE TELL TALE COMPASS.

	LIST PRICE.	RETAIL PRICE
7 inch Card. Can be read only from below,	$43.00	$35.00
8 " " " " " " "	49.00	39.00
9 " " " " " " "	52.00	42.00

Either of the above can be furnished with Nickel plate at **$5.00** extra.

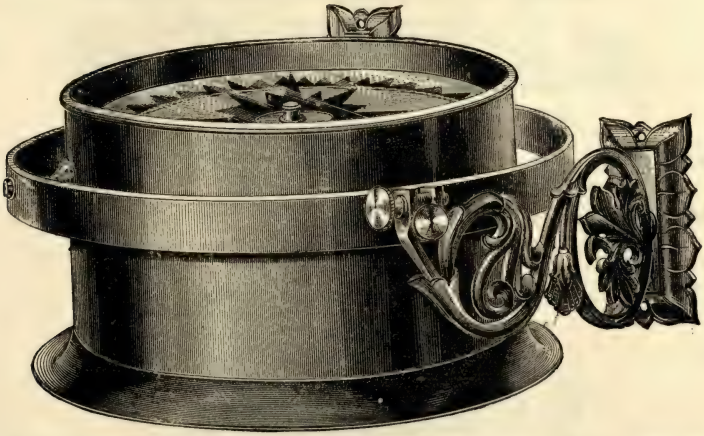
TELL TALE COMPASSES.



4½	inch Card,	Price,	$8.50
5½	" "	"	12.00
6½	" "	"	14 00

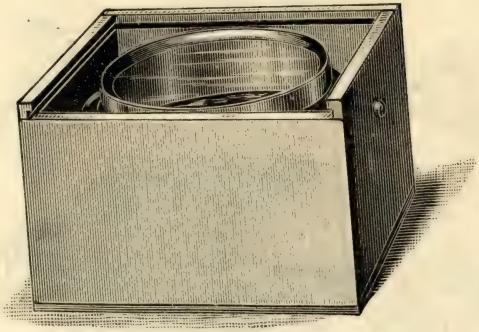
TRANSPARENT COMPASSES.

CAN BE READ FROM ABOVE OR BELOW.



6¼	inch Card. Complete with Bronze Arms,	Price,	$15.00
7	" " " " " "	"	19.00
8	" " " " " "	"	22.00
9	" " " " " "	"	26.00

DRY COMPASSES.

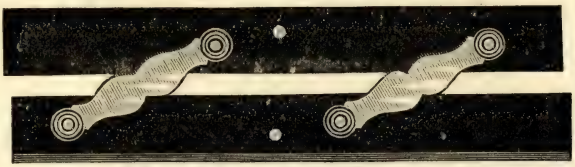


						PRICE
Wood Bowl,	10 inch	box,	6½ inch	card.	Agate centre, -	$4.00
Brass "	4¾ "	"	3 "	"	" " - -	4.00
" "	6½ "	"	4 "	"	" " -	5.00
" "	10 "	"	6¾ "	"	" " - -	8.50
" "	10 "	"	6¾ "	"	Gimbal Bell centre,	12.00
" "	11 "	"	7¾ "	"	" " "	15.00
" "	13 "	"	9 "	"	" " "	20.00

PARALLEL RULERS.

EBONY, BEST QUALITY.

SIGSBY RULER, 15 inch, $3.00.



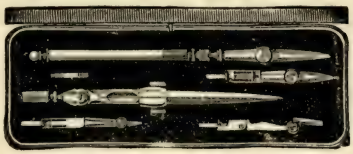
SIGSBY. 18 in. $4. 24 " $5.

12 inch, $1.00, 15 inch, $1.25 18 inch, $1.50

DIVIDERS, Brass, 40c. and 50c. German Silver, 75c. and $1.00.

MATHEMATICAL INSTRUMENTS.

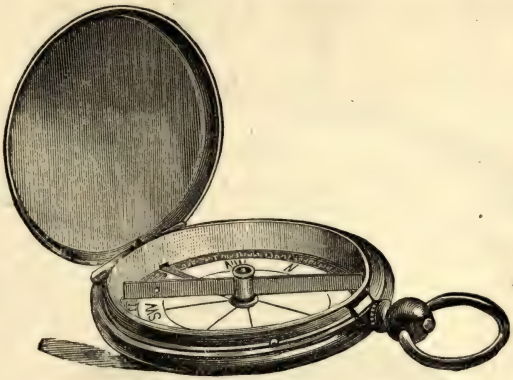
BEST QUALITY GERMAN SILVER IN MOROCCO CASE.



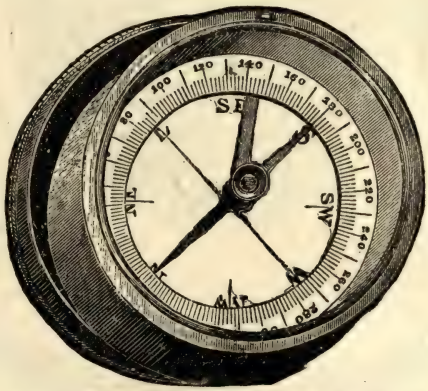
Velvet Lined Box.

4 Pieces,	5 Pieces,	6 Pieces,	8 Pieces,	9 Pieces,	10 Pieces,
$2.50,	$2.75,	$4.50,	$5.50,	$8.25,	$9.00.

POCKET COMPASSES.

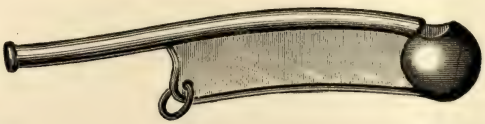


Nickel plated Watch Case, Spring Cover, Metal Dial, Bar Needle, Selfacting Stop. Price, $3.50.



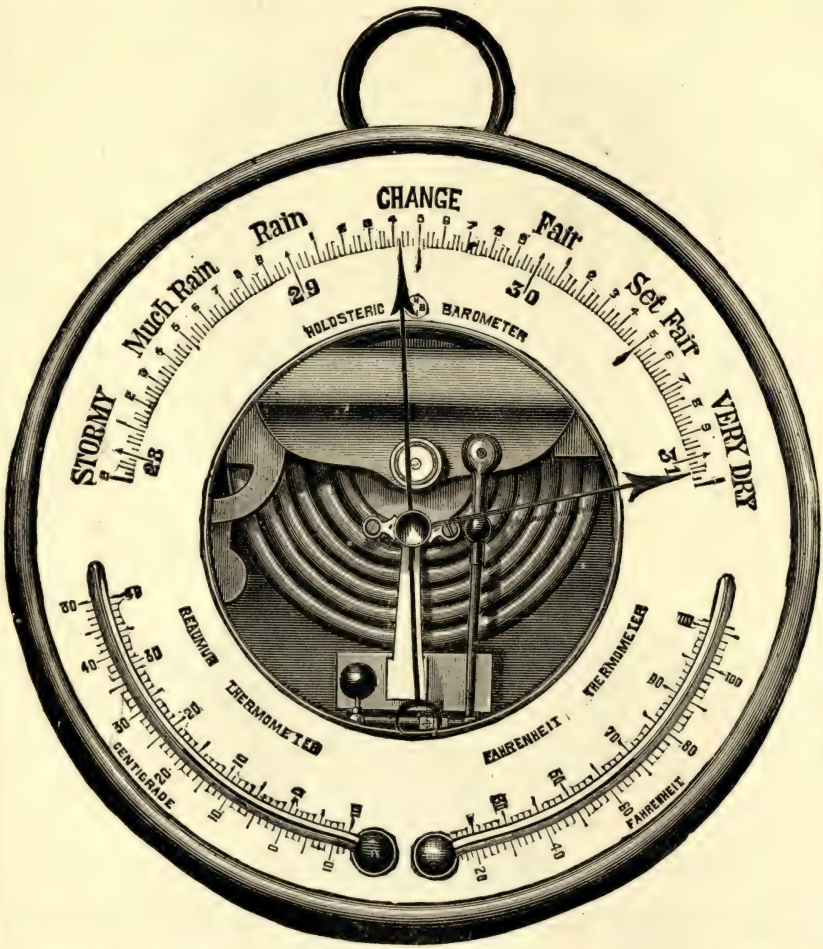
Brass Case, with Lid and Stop, $1.50, $2.00, $2.75, $3.00

BOATSWAIN'S CALL.



Sterling Silver, - - - - - - Price, $4.00

ANEROID BAROMETERS.

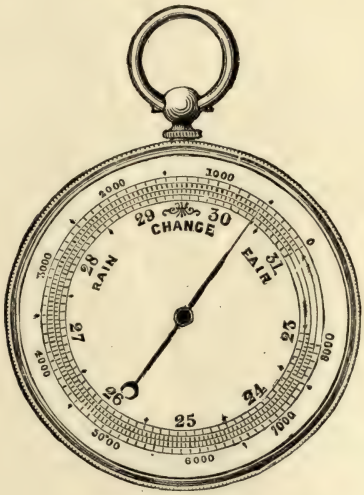


5 inch face,	Porcelain dial,	$5.50
5 " "	Card dial, closed,	7.00
5 " " " " "	better quality,	9.00
5 " "	Metal " "	10.00
5 " " " "	open one Thermometer,	16.00
5 " " " "	closed " " bronze case,	20.00
6½ " " " "	open two " " "	25.00
6½ " " " "	" "	20.00
8 " " " "	" "	25.00

The above, from the $9 grade up, are thoroughly tested with the Mercurial Standard under the air pump and guaranteed.

POCKET BAROMETERS.

In Morocco Case.



COMPENSATED.

3,000	feet,	2⅝	inch	dial,	revolving	Altitude	Scale.	Price,	$20.00
5,000	"	"	"	"	"	"	"	"	19.00
8,000	"	"	"	"	"	"	"	"	19.00
10,000	"	"	"	"	"	"	"	"	20.00
15,000	"	"	"	"	"	"	"	"	24.00
20,000	"	"	"	"	"	"	"	"	26.00

Any of the above styles with Thermometer on dial $3.00 extra.

MARINE BINOCULAR GLASSES.

Fine Glass,	26	"	6	"	- -	Price,		18.00
" "	26	"			Grand Power,	"		26.00
" "	26	"	12	"	Aluminum,	"		60.00
" "	26	"	6	"	- - -	"		35.00

Each of the above complete with case and strap.

NIGHT GLASSES.

The production of our Night Glass is the result obtained after years of experiments, and we guarantee it to be superior to any other Night Glass on the market. They also are fine glasses for day use.

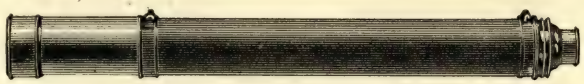
We make them in five grades.

Night Glass,	26	Lignes,	6	Lenses,	- -	Price,	$12.00
" "	26	"	6	"	- - -	"	15.00
" "	26	"	6	"	- - -	"	20.00
" "	26	"	12	"	- - -	"	26.00
" "	26	"	12	"	Aluminum,	"	35.00

Each of the above complete with best hard leather case and strap.

Our $12 Night Glass is the best for the price ever put on the market.

MARINE TELESCOPES.



We make our Telescopes with one draw, so that they can be easily held out.

1¾	inch object ;	fair Telescope,	Price, $10.00
1¾	" "	good quality,	" 15.00
1⅞	" "	better "	" 20.00
2	" "	extra "	" 22.00
2¼	" "	" "	" 26.00

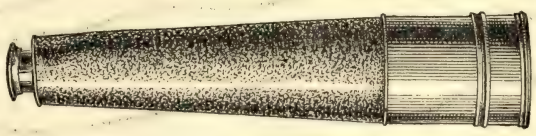
Three Special Superior Grades.

2¼	inch object.	Special Large Field, high power,	$30.00
2½	" "	" " " "	40.00
2⅞	" "	" " " "	50.00

We make a specialty of the last three grades ; the power is very high and the field large, so that when the vessel is pitching an object can be readily kept in the field.

These glasses are used largely by Whalers.

A NEW STYLE TELESCOPE, SHORT BODY.



2⅞ inch object, large field, - - - - - - $30.00

2 " " " " - - - - - -

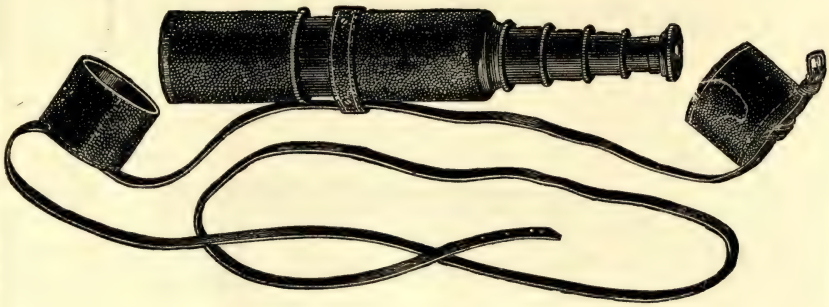
This Telescope is a departure from anything that has been made.

It combines the handiness and large field of a binocular, with the power of a telescope.

The use of an ordinary telescope at sea is not satisfactory unless in the hands of an expert.

With this new style telescope a novice can get perfect satisfaction.

TOURISTS' TELESCOPES.



Buff Leather Case covered body, with Sun Shade.

Leather Caps and Strap.

Dimensions. *Open.*	*Closed.*	*Diameter of Object.*	*Magnifying power.*	PRICE.
17 in.,	6 in.,	13 Lignes,	20 times,	$7.00
36 "	11 "	22 "	35 "	18.00

SUPERIOR.

20½ in.,	6½ in.,	16 Lignes,	25 times,	$10.00
29 "	7¾ "	19 "	30 "	16.00
36 "	11 "	22 "	35 "	21.00

T. BASSNETT'S

PATENT

Atmospheric Sounder.

This Instrument is constructed on the principle that the pressure of the water increases as the depth, 33 feet or 5½ fathoms being equal to one atmosphere, or 14.7 pounds per square inch.

ADVANTAGES.

Soundings can be obtained at any rate of speed without stopping the Ship, and unlike other instruments of its kind, requires no removal of the glass tube, except through breakage by carelessness, when a new tube, which is supplied, can easily be fitted. It is not liable to get out of order, and can be used with any ordinary lead and line, merely requiring to be attached to the line.

DIRECTIONS.

The Instrument to be attached to the lead line, and the drain pipe to be closed. When Sounding, the water will ascend the inner tube, and overflow into the outer glass tube, where it will indicate the depth measured on the scale of fathoms. On being drawn out of the sea the water will remain in the outer tube till liberated by the drain pipe.

Price, with Box and spare tube, - - **$31.00**

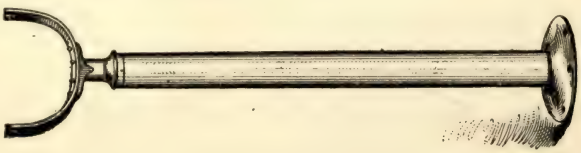
180 fathoms of line, made expressly for Sounder with great breaking strain, - - **$9.00** extra.

NEGUS IMPROVED "PELORUS."

Price, $50.

With this useful instrument Ship-masters can easily and quickly determine the errors of their Compasses. It can be used anywhere on deck. Is also very convenient for taking bearings, &c.

The quality and workmanship is of the best, as it should be in all instruments of precision.

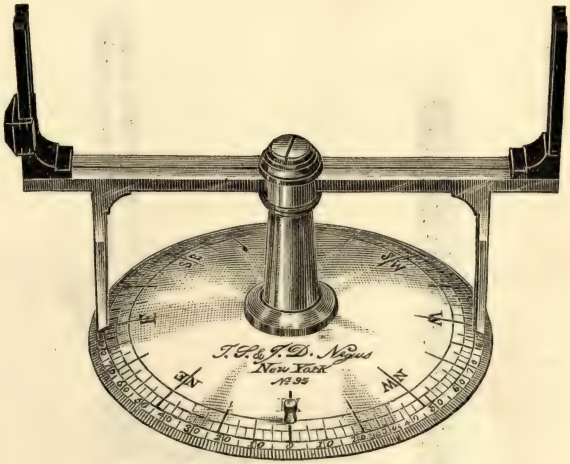


PELORUS STAND.

With movable Yoke and Socket.

Price, $25.00

NEGUS IMPROVED "ALIDADE."



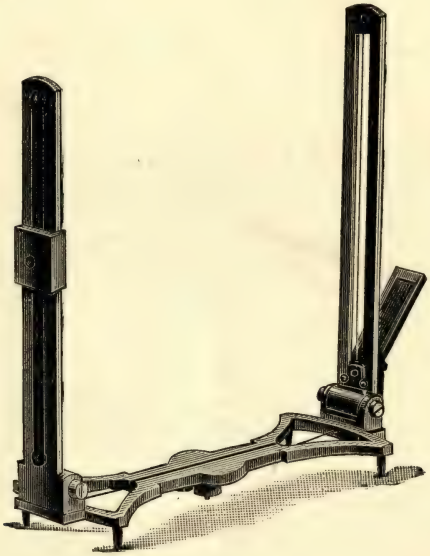
Made to fit any Binnacle top.

Price, $30.00.

The "ALIDADE" is a modification of the "PELORUS," but is fitted to the top of a Binnacle, and can be removed at pleasure.

It is used as an Azimuth for the correction of the Compass, and is especially adapted for taking bearings. It is simple and strong, and will stand years of wear.

"NEGUS" IMPROVED AZIMUTH.



Price, - $25 00
Fitted with prisms, - - $30.00
FITTED TO ANY LIQUID COMPASS.

The above cut shows our Improved Azimuth, which we can fit to almost any style of Liquid Compass. It is very simple, handy, and practical for taking bearings of the sun, stars, and land objects. It reads from the side on which the object bears, not having to reverse the reading as in so many Azimuth instruments.

The arms are very long, so that the bearing of a star can be taken when very high.

COMPASSES

Adjusted in Iron and Steel Vessels.

CARDS OF DEVIATION FURNISHED.

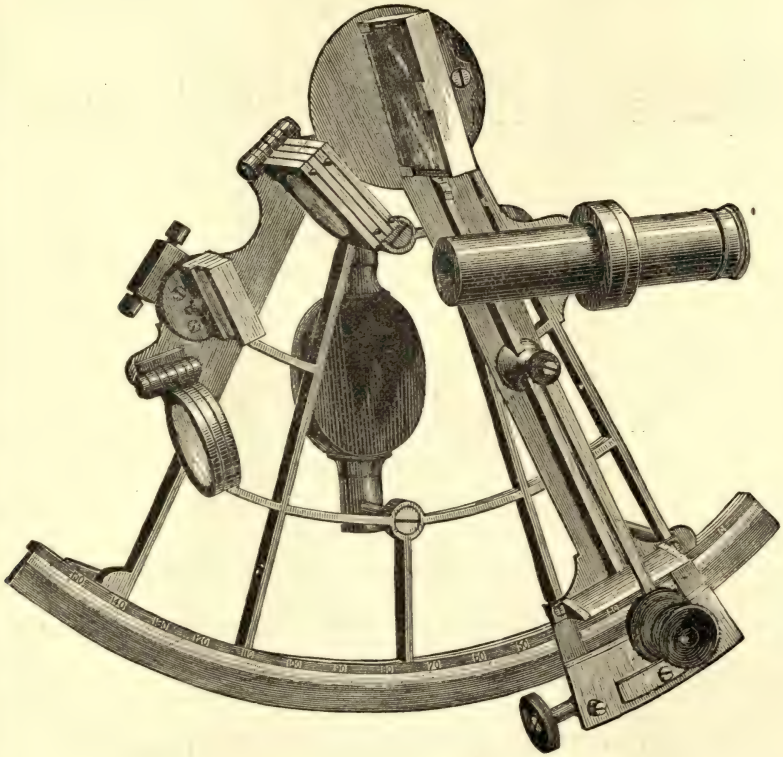
MAGNETS SUPPLIED.

We make a *Specialty* of the *Adjustment of Compasses*, and have our own Adjuster in our exclusive employ.

All adjustments promptly and accurately executed.

ESTIMATES AND PRICES GIVEN UPON APPLICATION.

SEXTANTS AND OCTANTS.

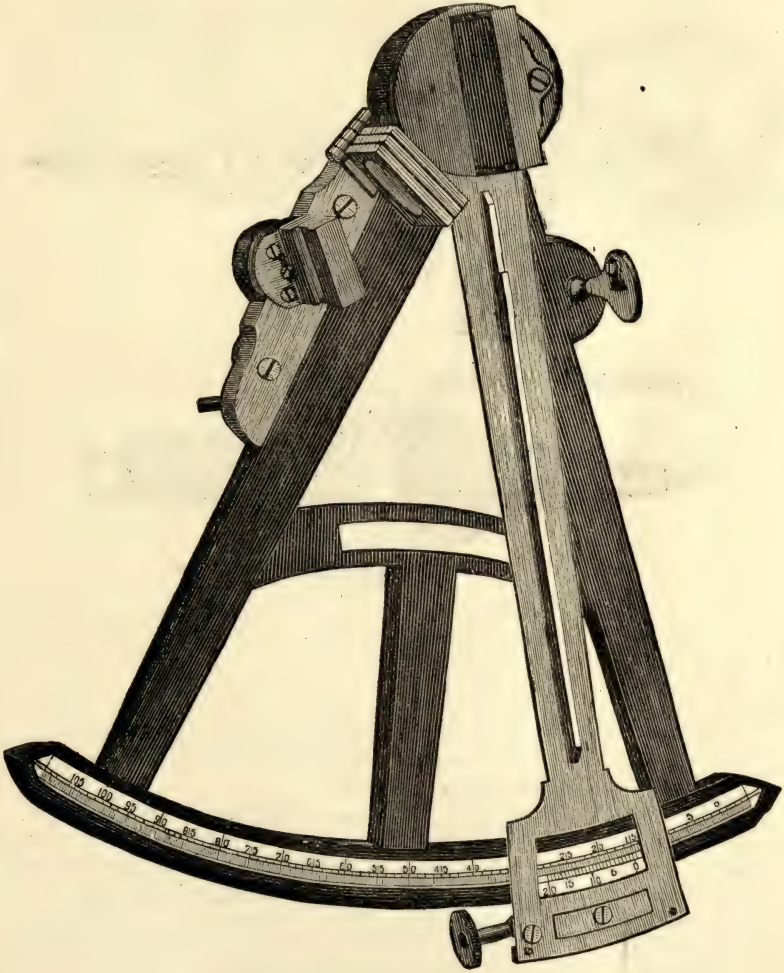


SEXTANTS, - $50, $60, $65, $75 and $100

METAL OCTANTS, divided on silver, $40 and $45

Our new Model Sextants read an arc of 150°. This is of great advantage in using the Artificial Horizon where the angle is double, and it increases the field in ordinary work.

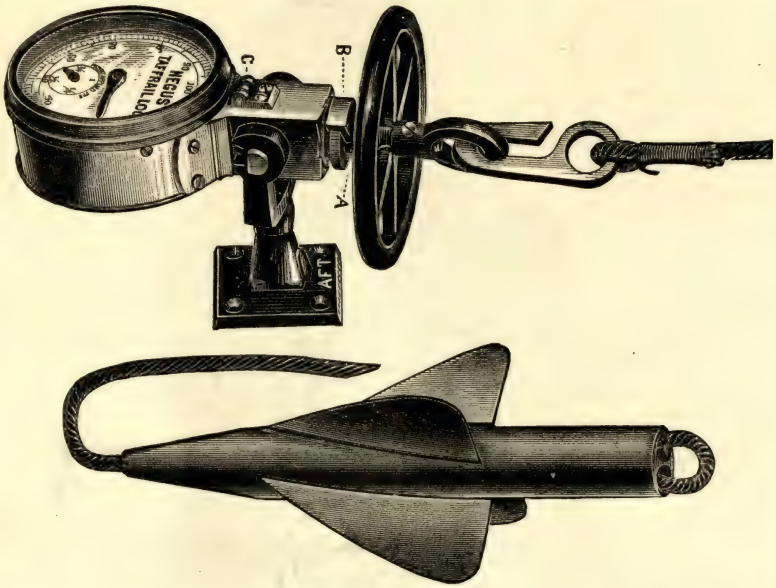
QUADRANTS.



Ebony Quadrants, Ivory Arc.

Single Tangent,	- - - - - - -	Price,	$18.00
Double "	- - - - - - -	"	20.00
" "	Vertical Key, - - -	"	21.00
" "	" " two back shades,	"	22.00

"Negus" Improved Taffrail Log.



Price complete, 1 line, 1 Rotator, 2 shoes,	- -	$27.00
" Extra Rotators,	- - -	5·00
" " lines	- - - -	4.50

The above cuts show our *new Taffrail Log*, which we claim is the *best ever* manufactured,—for the following reasons:

First. Because it is the most accurate.

Second. It will wear longer than any other, on account of the construction of the main shaft bearings, which are in two sets, and composed of *hard steel balls*, running in hard steel cones and cups. (The main shaft bearing is the *weak* point in *all* other logs.)

Third. The friction is *always* the same whether the log is *new* or *old*, consequently the register remains the same. In other logs the friction increases as the logs become older and worn.

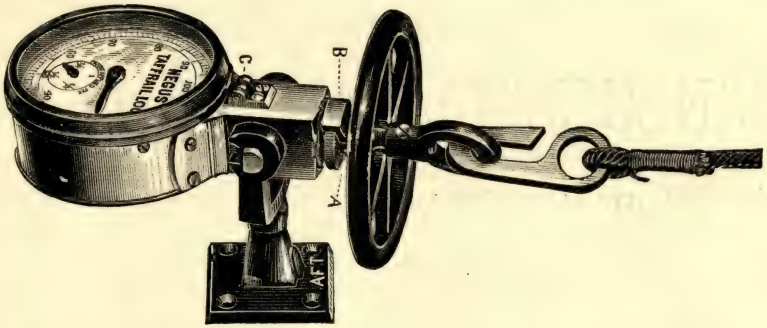
Fourth. After a long period of time when there is a *slight* wear in the main shaft bearings, it can be set up or adjusted without sending the log to the repair shop.

Fifth. It gives a uniform register of vessels speed, does not stop for a time and then spin off rapidly.

One trial of the log will convince any practical person of its great merit.

T. S. & J. D. NEGUS.

Length of Line for Negus Log.



We give herewith a guide as to length of line required with the NEGUS LOG. It is based on the idea that a vessel is loaded and of ordinary height. A vessel of extra height or in ballast requires more line.

Sailing Vessels, - - - -	200 to 250 feet of line.
Steamers of 8 to 10 knots, - - -	250 " " "
" 10 " 12 " - - -	300 " " "
" 12 " 14 " - - - -	350 " " "
" 14 " 15 " - - -	375 " " "
" 15 " 17 " - - - -	400 " " "
" 17 " 19 " - - -	450 " " "
" 19 " 20 " - - - -	475 " " "
" 20 " 22 " - - -	500 " " "

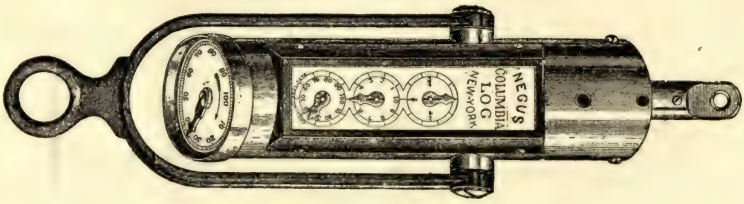
At a speed of above 13 knots we recommend the use of our governor which we supply without extra charge.

In supplying our logs to the trade, or to vessels the speed of which we do not know, we send 300 feet of line as it seems to suit the average speed; but any vessel being supplied with our log and with improper length of line, we will exchange the line for one of proper length provided it is not soiled nor uncoiled.

T. S. & J. D. NEGUS,
140 WATER STREET,
New York City.

"NEGUS" COLUMBIA LOG.

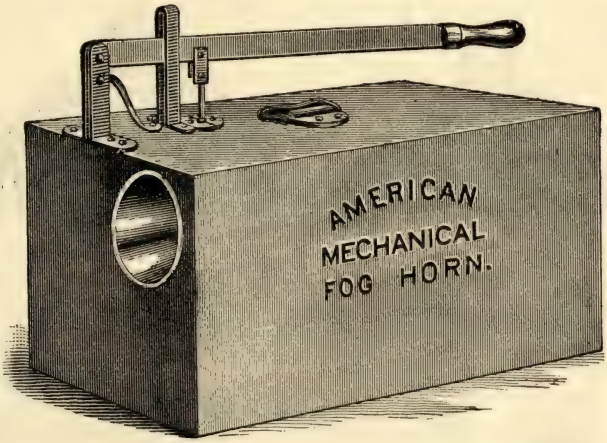
FOR YACHTS AND SMALL VESSELS WITH SPEED NOT OVER 12 KNOTS.



PRICE, - - $18.00.

This log is made on the model of the "Bliss," the bearings are stronger, and it has the addition of register dial at the end.

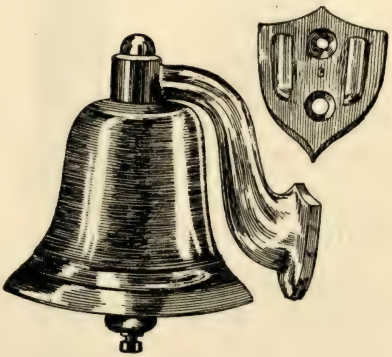
The lines and rotators for this log are interchangeable with the "Bliss."



All working parts are of Metal.

Not liable to get out of order. - - - Price, $14.00

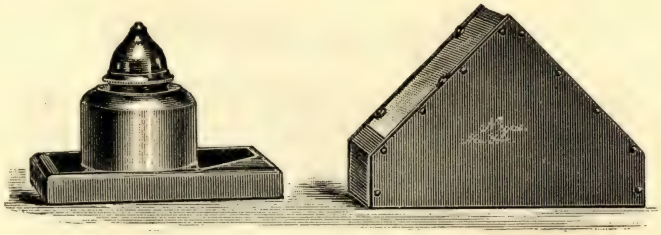
SHIPS' BELLS.



ALL FINE TONES

6 inch, - -	$9.00
7 " - -	11.00
8 " - -	14.00

ARTIFICIAL HORIZONS.

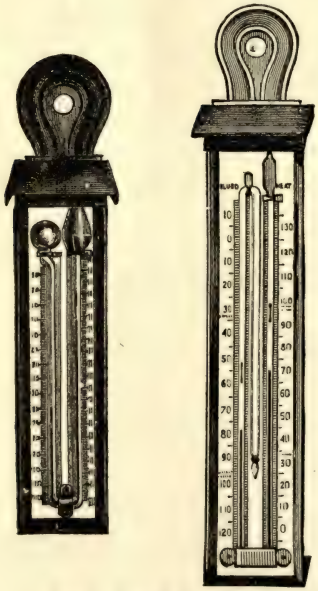


Best Quality.

PRICE.

Complete in finely finished *Mahogany Box*, with Mercury, $32.00

THERMOMETERS.



Self Registering Thermometers.

Boxwood, $3.50, $6.00

Porcelain, $9.00

Thermometer.

Porclain, Two Scales, $3.50.

Boxwood,

One Scale, $1.50

" " 1.75

Sea Water Thermometers.

Japanned Case, 40c., 75c., 1.50.

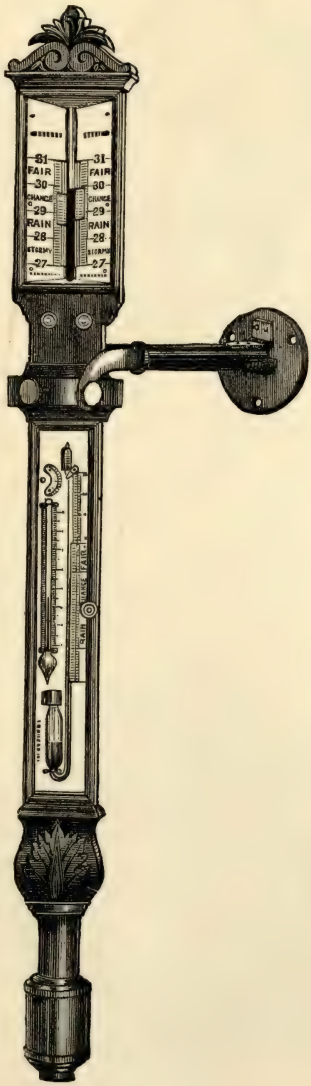
Copper case,

Best, $2.50

Deep sea, 5.00

MASON'S HYGROMETERS, Wet and Dry Bulb. Price, $3.50

MERCURIAL BAROMETERS.



FOR

MARINE

USE.

$18.00

TO

$25.00.

STANDARD MARINE BAROMETERS.

The above is our best quality instrument, finished in steel bronze.
The scale reads by Vernier to one-hundredth of an inch.
The Barometer is hung in gimbals and suspended by an arm.

Price, in transportation box, - $40 00

COMPANION PIECES FOR PANELS.

Outside diameter, 11 inches.

Fine Quality NEGUS 8-day Clock, Gilt and Oxydized Silver Wheel $50.00

Barometer to match, - - - - - - - - - - 50.00

Outside diameter 8 inches.

COMPANION PIECES

FOR PANELS.

Fine quality 8-day NEGUS Clock, wood case, mahogany, oak, etc.

Price, - - $20.00

Barometer to match, 20.00

NEGUS SHIPS BELL CLOCK.

HAND-MADE WHEEL IN GILT AND OXYDIZED SILVER.

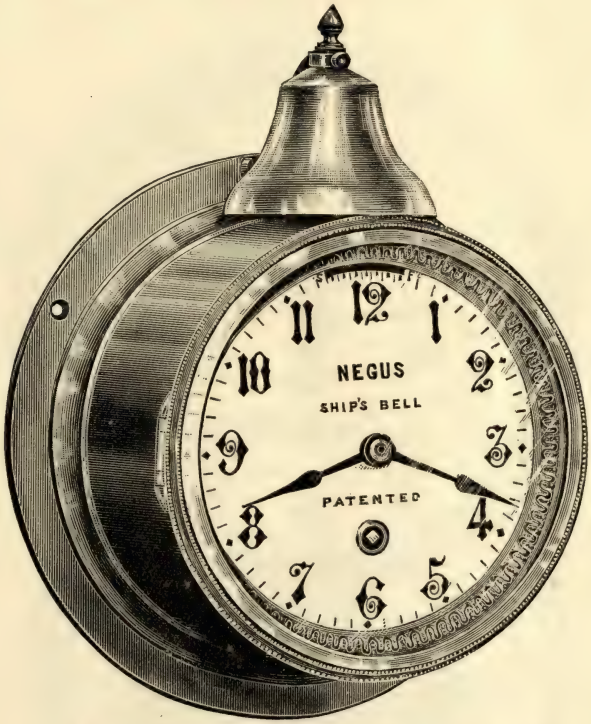
Outside diameter, 11 inches.

Price, - - - - - - - - - $100.00

We make Barometers to match this Clock, - - 50.00

"NEGUS"

SHIP'S BELL CLOCK.



CASE IS SOLID CASTING OF RED METAL.

High grade 8 day movement. Compensation Balance.

5½ in. across face, 7 in. across back.

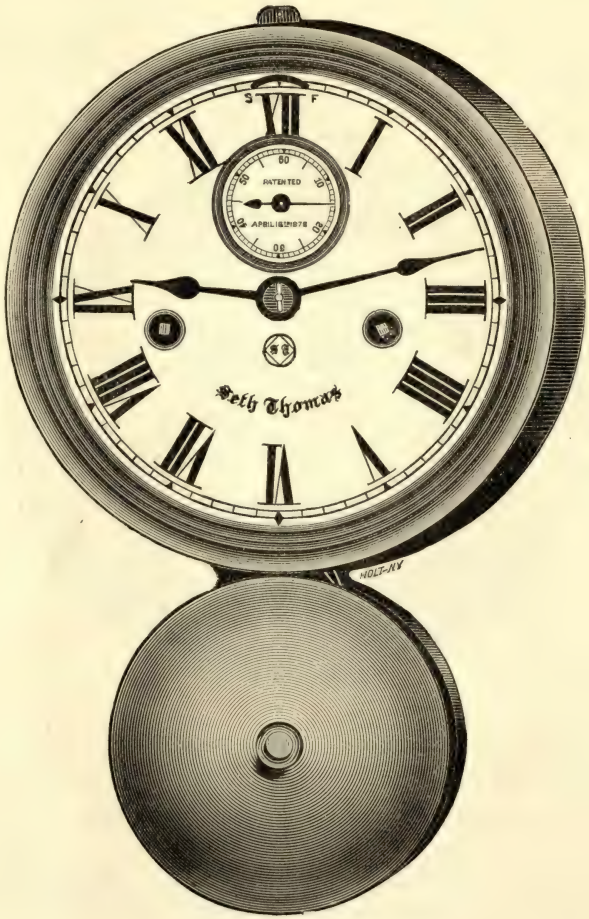
Our Ship's Bell Clock is the **only** one on the Market that *does* not get out of order. **Hands** can be turned backward or forward without deranging the Striking Parts.

Will **always** Strike the **bell** indicated by the hands.

PRICE, $60.00

MARINE LEVER CLOCKS.

Ship's Bell Strike.

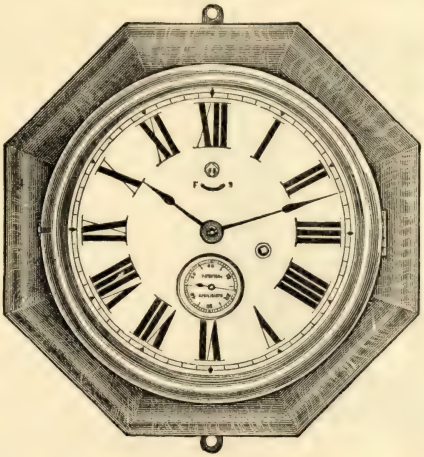


Ship's Bell Strike, 6 inch dial, 1 day time, - Price, $6.50

Ship's Bell Strike, 7½ inch dial, 1 day time, - Price, 18.00

Bell is inside of Clock.

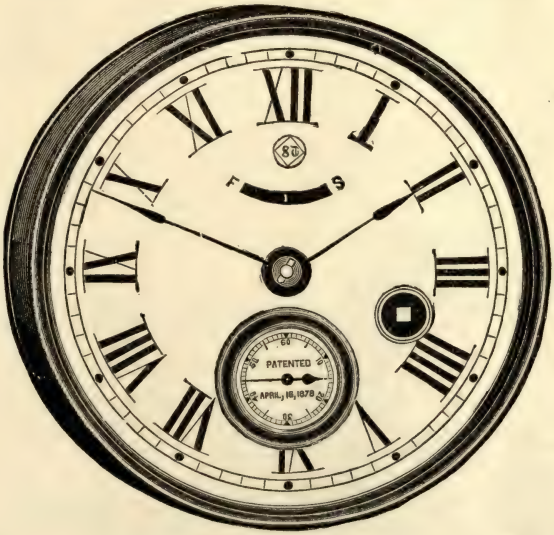
MARINE LEVER CLOCKS.



In Rosewood, Walnut or Mahogany.

				PRICE.
4 in. dial,	1 day time,			$2.75
6 " "	1 " "			3.50
6 " "	8 " "			5.25
8 " "	1 " "			4.00
		Strike,		4.75

ENGINE TIME IN BRASS OR NICKEL.



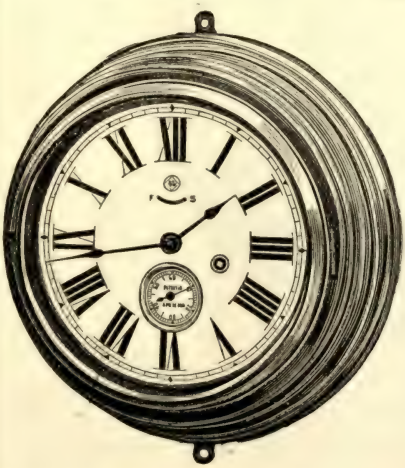
6 inch dial,	1 day time,	Brass.	- - -	Price,	$3.75
6 " "	1 " "	Nickel.	- -	"	4.00
6 " "	8 " "	Brass.	- - -	"	5.75
6 " "	8 " "	Nickel.	- - -	"	6.00

MARINE LEVER CLOCKS.

Chronometer Lever; very fine time-piece,

IN NICKEL OR BRASS,

	PRICE.
Chronometer Lever, heavy case, eight day, dust proof, 4 in. dial,	$22.00
" " " " " " 6 " "	24.00
" " " " " " 8 " "	27.00
" " Spun case, - - - 4 " "	15.00
" " " " fancy dial, - - 4 " "	18.00



NICKEL CLOCKS.

NICKEL CASE.

	PRICE.
4 inch dial, 1 day time,	$2.75
6 " " 1 " "	3.75
6 " " 8 " "	5.75

American Ensigns and Jacks.

SIZE.	PRICE.	SIZE.	PRICE.	SIZE.	PRICE.
2 x 3 feet,	$2.00	5 x 10 feet,	$7.25	12 x 24 feet,	$30.00
2 x 4 "	2.50	6 x 10 "	8.50	15 x 24 "	37.50
2½ x 4 "	2.50	6 x 12 "	10.00	12½ x 25 "	33.00
2½ x 5 "	2.75	8 x 12 "	11.50	16 x 25 "	38.00
3 x 5 "	3.00	8 x 15 "	13.50	14 x 28 "	41.00
3 x 6 "	4.00	10 x 15 "	16.50	16 x 28 "	45.00
4 x 6 "	4.50	9 x 18 "	18.00	15 x 30 "	46.00
3½ x 7 "	4.50	10 x 18 "	20.00	20 x 30 "	55.00
4 x 7 "	5.00	10 x 20 "	22.00	18 x 36 "	62.00
4 x 8 "	5.50	12 x 20 "	25.00	20 x 36 "	66.00
5 x 8 "	6.00	11 x 22 "	26.00	20 x 40 "	71.00
4½ x 9 "	6.25	14 x 22 "	31.00	23 x 40 "	87.00
6 x 9 "	7.50				

International Code of Signals.

19 FLAGS.

Roped and Toggled with Canvas Bag.

SIZE.	PRICE.	SIZE.	PRICE.	SIZE.	PRICE.
3 x 3 feet,	$22.00	4 x 4½ feet,	$33.00	5 x 5½ feet,	$46.00
3 x 3½ "	23.00	4½ x 4½ "	38.00	5½ x 5½ "	51.00
3½ x 3½ "	26.00	4½ x 5 "	42.00	5½ x 6 "	52.00
4 x 4 "	30.00	4½ x 6 "	46.00	6 x 6 "	60.00

Atlantic Yacht Club Code.

7 FLAGS.

Roped and Toggled with Canvas Bag.

SIZE.	PRICE.	SIZE.	PRICE.	SIZE.	PRICE.
2 x 2 feet,	$8.50	3 x 3 feet,	$12.50	4 x 4 feet,	$17.00
2½ x 2½ "	10.00	3½ x 3½ "	14.50		

BURGEES.

Plain designs, with or without Borders and not over two Stars.

Length	*5 feet.*	*6 feet.*	*8 feet.*	*10 feet.*	*12 feet.*	*15 feet.*	*20 feet.*	*25 feet.*	*30 feet.*	*35 feet.*
Muslin or Bunting Letters,	$3.00	$3.50	$4.75	$5.50	$7.50	$9.50	$14.00	$21.00	$31.00	$41.00
Alpaca Letters,	3.50	3.75	5.25	6.00	8.00	10.50	14.50	22.00	32.00	43.00
Merino Letters,	4.00	4.25	6.00	7.00	9.00	12.00	16.00	24.50	34.00	47.00

ESTIMATES FURNISHED FOR OTHER DESIGNS.

BOOKS.

Epitome of Navigation,	Norie,	$7.00
" "	Raper,	7.00
" "	Bowditch,	2.25
" "	Thom,	4.00
Complete Nautical Tables,	Norie,	4.50
Useful Tables,	Bowditch,	1.25
Elementary Navigation,	Rosser,	1.50
" "	Henderson,	1.00
Wrinkles in Practical Navigation,	Lecky,	7.50
Practical Aid to the Navigator,	Sturdy,	2.00
Yachtsman's Guide. A simple and comprehensive work on Navigation, Seamanship, Yacht Routine, etc., with Illustrations.	Patterson,	5.00
Lunar Tables,	Rosser,	3.50
Lunar and Horary Tables,	Thomson,	4.00
Lunar and Nautical Tables,	Coleman,	5.00
Ex-Meridian Altitude Tables,	Towson,	.50
Apparent Time at Sea,	Martelli,	1.75
Ex-Meridian Tables,	Bairnson,	2.00
How to find the Latitude and Longitude in Cloudy Weather,	Johnson,	.50
How to find the Time at Sea in less than a Minute,	Johnson,	1.00
Handbook to the U. S. Local Marine Board Examinations,	Patterson,	2.00
Ainsley's Guide to the Local Marine Board. Examination of Masters and Mates,		3.00
Ainsley's Extra Master's Guide,		6.00
Reed's New Guide Book,		2.00
Key to Reed's New Guide Book,		1.50
Engineer's Manual,	Ainsley,	5.00
"Kedge Anchor."—Practical Seamanship,		3.50
Bergen's Seamanship,		1.00
Reed's "		1.00
Azimuth Tables, 61° N. to 61° S.,	U. S. Navy,	4.25
" " 40° N. to 50 N.,	"	.50
" " 70° to 80°	"	.80
" " 30° to 60°	Burdwood,	2.00
" " 30° N. to 30 S.,	Davis,	4.75
Naval Reserve Man's Guide,	Patterson,	1.00
Elementary Manual for the Deviation of the Compass in Iron ships,	Evans,	3.00
Deviation of the Compass,	Towson,	2.00
Magnetism and Deviation of the Compass,	Ainsley,	1.50
Compass Corrector,	"	2.00
The Stars.—How to Know and Use Them,	Rosser,	2.50
Revolving Planisphere—showing the Stars visible for every hour in the year, Northern Hemisphere,		1.00

BOOKS, continued.

Planisphere—Southern Hemisphere,		$1.25
Law of Storms,	Rosser,	2.25
The Aneroid, How to Use it,		.25
Navigators' Pocket Book,	Patterson,	2.00
Sailors' Pocket Book,	Bedford,	3.50
The Danger Angle,	Lecky,	2.00
Book of Knots,		1.00
Sails and Sail-Making,	Kipping,	1.00
Masting and Rigging,	"	1.00
Yacht Designing,	Biddle,	1.00
Vessels and Voyages,	Wynkoop,	2.00
Notes on Stowage,	Hillcoat,	2.25
Yachtsman's Annual,	Kiley,	.50
International Code of Signals,		3.00
British Code List,		2.25
Flags of all Nations,		.50
Light Houses of the World,		3.50
Port Charges of the World,	Hunter,	12.00
The Sextant,	Brainard,	.50
A List of Geographical Positions,		.75
Development of Great Circle Sailing,		1.00
Submarine Cables of the World,		1.00

ALMANACS.

American Ephemeris and Nautical Almanac,	$1.25
" Nautical Almanac,	.50
British Admiralty Nautical Almanac,	1.25
Brown's Diary and Nautical Almanac,	1.25
" Nautical Almanac,	.50
Ainsley's " "	.50
Tide Table of the World,	.50

SAILING DIRECTIONS, U. S. COAST.

U. S. Coast Pilot,	Pratt,	$2.00
St. Croix River to Cape Ann,		1.00
Cape Ann to Point Judith,		1.00
Point Judith to New York,		1.00
New York to Chesapeake Bay,		1.00
Chesapeake Bay and Tributaries,		1.00
" " to Key West,		.50
Key West to the Rio Grande,		.40
Illustrated Coast Pilot—New York to Maine,		1.00
" " " New York to Florida,		1.00
Depths of Harbors of U. S.		.25

Improved Transparent
COURSE PROTRACTOR,

—MADE BY—

T. S. & J. D. NEGUS,

Chronometer Manufacturers and Navigation Warehouse,

140 WATER STREET, NEW YORK.

IT IS USED

1st. Instead of Parallel Rulers, to find on charts courses and bearings and positions from cross-bearings.

2nd. As an Inspection Table, to turn compass courses into true courses, and *vice versa.*

DIRECTIONS.

Place the open center of the Protractor directly over the position of ship on the chart, then set the Protractor true by the parallel lines around its edges, cutting or running parallel to some meridian on the chart.

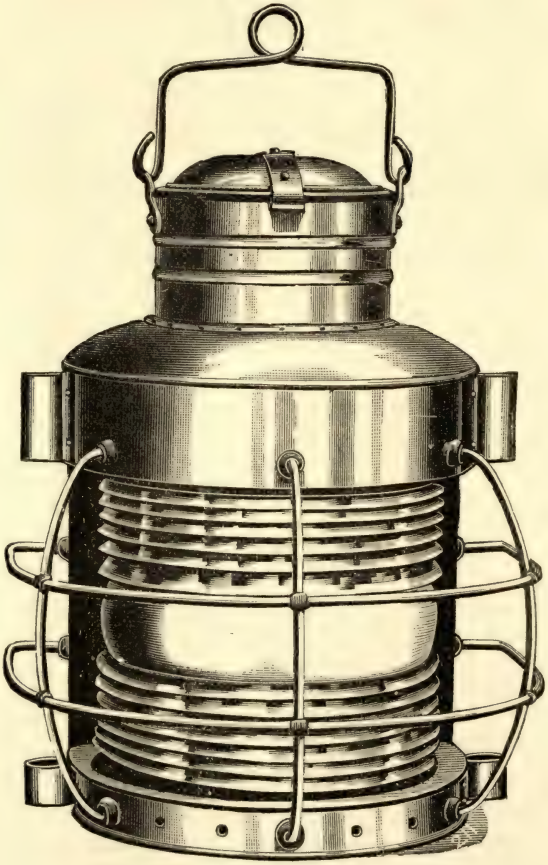
With the silk cord draw a North line, then keeping the cord drawn to the North, with the other hand turn the Protractor (keeping it central over position) to the East or West for variation and deviation, if any.

Now stretch the cord to any point, and the reading on the Protractor where the cord passes over it will be the compass course to be steered.

Price, - - - - - - - - $1.50

Recommended to all Navigators by the Highest Authorities of the Naval and Merchant Service.

MAST HEAD OR BOW LIGHT.



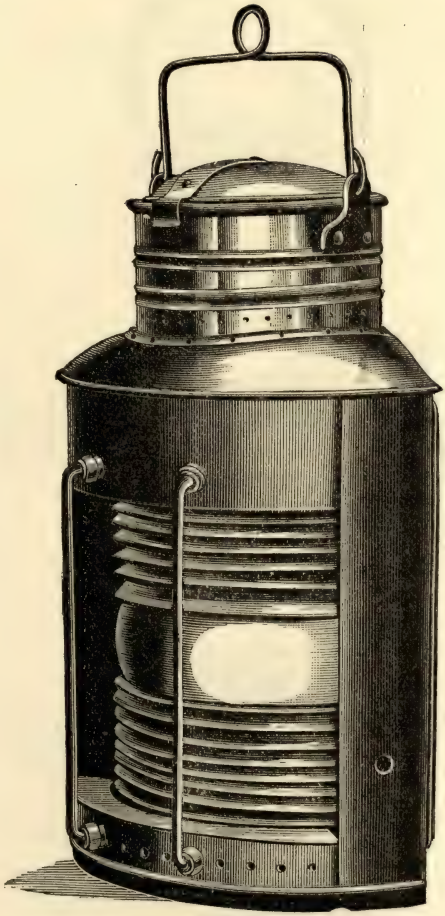
No. 50.

Brass with Chimney. Glass 9 x 22 inches, for largest vessels. - Price, $35.00

(*Matches Side Lights on page 66.*)

SIDE LIGHTS,

PORT AND STARBOARD.

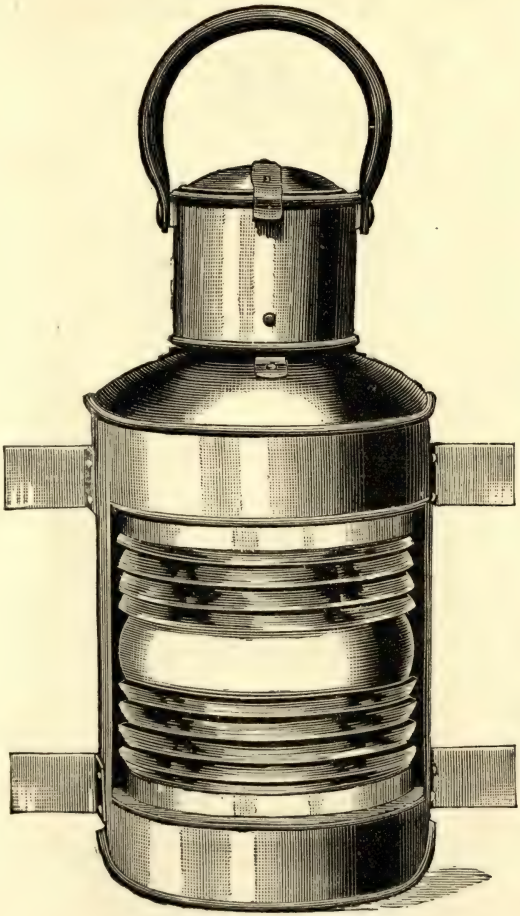


No. 51.

Brass with Chimney. Glass 9 x 22 inches, per pair, Price, **$55.00** for largest vessels.

(*Matches Mast Head Light on page 65.*)

MAST HEAD OR BOW LIGHTS.



No. 52.

—BRASS.—

No. 52, with or without Chimney.	Glass 7 x 12,	Price,	$20.00
" 53, " " " "	6 x 8,	"	15.00

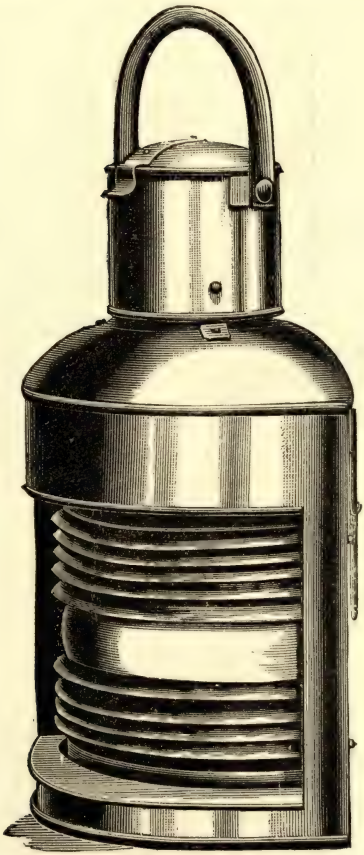
—GALVANIZED IRON.—

" 54, no Chimney.	Glass 7 x 12, - -	"	12.00

(*Matches Side Lights on page 68.*)

SIDE LIGHTS,

PORT AND STARBOARD.



No. 55.

—BRASS.—

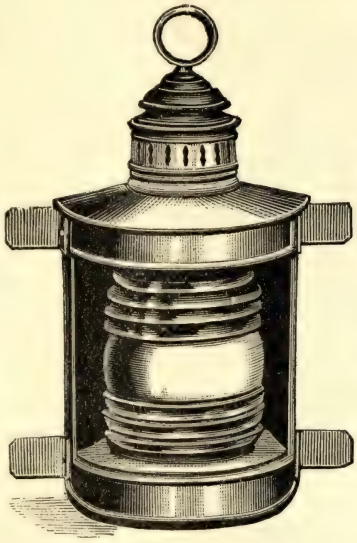
	PRICE.
No. 55, with or without Chimney. Glass 7 x 12, per pair,	$45.00
" 56, " " " " 6 x 6, "	33.00

—GALVANIZED IRON.—

" 57, no Chimney. Glass 7 x 12, - - per pair,	24.00

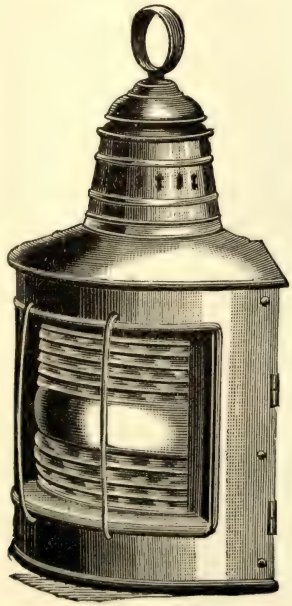
(*Matches Mast Head Lights on page 67.*)

MAST HEAD LIGHTS.



No. 59.

No.		Price.
58,	Brass, Glass 6 x 6 in.,	$10.50
59,	" " 5 x 6 "	8.00
60,	Galvanized Iron, Glass 6 x 6 in.,	5.25
61,	Galvanized Iron, Glass 5 x 6 in.,	4.50

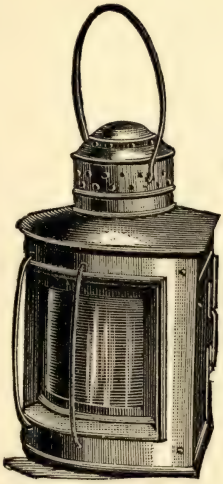


No. 63.

SIDE LIGHTS.

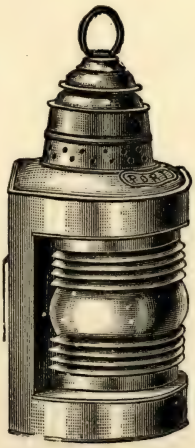
No.		Price.
62,	Brass, Fresnel Glass 6 x 6, per pair,	$24.00
63,	" Glass 4½ x 6½, per pair,	11.25
63½,	" Fresnel, "	21.00
64,	Galvanized Iron, Fresnel Glass 6 x 6, per pair,	12.00
65,	Galvanized Iron, Fresnel Glass 4½ x 6½, per pair,	9.00
66,	Galvanized Iron, plain, Glass 4½ x 6½, per pair,	5.50

SIDE LIGHTS.



No. 67

NO.		PRICE.
67,	Brass, Glass 3½ x 5½ in., per pair,	$12.00
67½,	" Fresnel, - - -	15.00
68,	Galvanized Iron, Glass 3½ by 5½ in. per pair, - - - -	5.25
68½,	Galvanized Iron, 3½ in. Fresnel,	9.00



FOR SMALL YACHTS.

70,	Brass, Glass 4 in., Fresnel, -	$12.00
71,	" " " Plain, - -	9.00
72,	Gal. Iron" " Fresnel, -	7.50
73,	" " " " Plain, - -	4.50

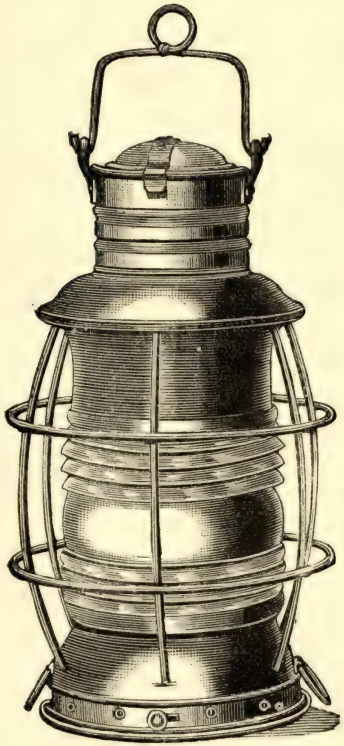
EXTRA SMALL SIZE.

70a,	Brass, Glass 3½ in., Fresnel, -	$9.00
72a,	Gal. Iron, " " " - -	6.00
73a,	" " Plain, - -	4.00

BOW LIGHT.

59a,	Brass, 3½ in., Fresnel, - -	$6.00
61a,	Gal. Iron, " - - - -	3.50

ANCHOR LIGHTS.



No. 76.

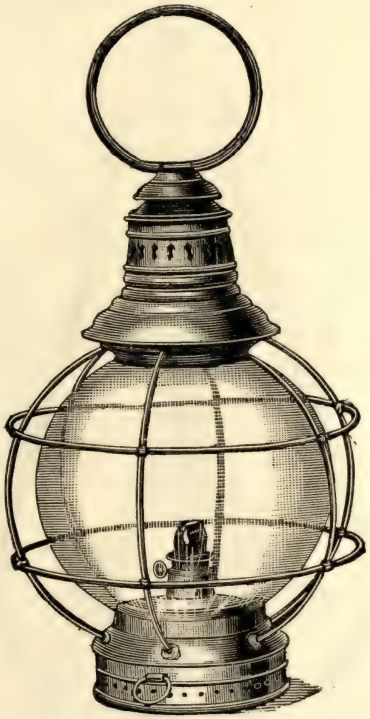
—BRASS.—

NO.		PRICE.
75,	8 in. diam., Fresnel Globe, with Chimney. Best Anchor Light made,	$20.00
76,	6 in. diam., Fresnel Globe, with Chimney. Best Anchor Light made,	10.00
77,	8 in. diam., Fresnel Globe, no Chimney,	15 00
78,	6 " " " " " "	7.50
79,	4 " " " " " "	5:50

—GALVANIZED IRON.—

80,	8 in. diam., Fresnel Globe, with Chimney,	15.00
81,	8 " " " " no "	9.50
82,	6 " " " " " "	5 00
83,	4 " " " " " "	3.50

ANCHOR LIGHTS.



No. 86.

—BRASS.—

NO.		PRICE
84,	10 inch diameter Globe,	$7.50

—GALVANIZED IRON OR ZINC.—

85,	10 inch diameter Globe,	5.00
86,	8 " " "	2.25
87,	8 " " " Tin,	1.60

TIN.

88,	Smack Anchor Light. Square 9 x 13 in. Glass,	5.00
86,	" " " " 8 x 10 " "	4.50

HURRICANE CABIN LAMPS.

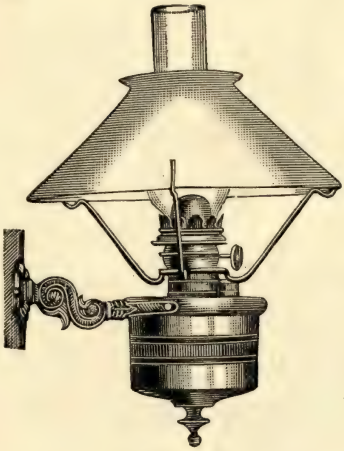
Will stand any draft.

No. 90.

Can be ordered any length of drop from 28 inches up.

No. 90,	in Steel Bronze, or Gilt,	Price,	$24.00
" 91,	" Nickel,	"	30.00
" 92,	same style as above, steel, without Hurricane Attachment, Bronze,	"	15.00
" 93,	same style as above, Nickel, without Hurricane Attachment,	"	18.00
" 94,	plainer Style, Steel, without Hurricane Attachment,	"	12.50
" 95,	" " Nickel, " " "	"	16.00
" 96,	Bracket Hurricane Lamps. Steel or gilt,	"	21.00
" 97,	" " " Nickel,	"	24.00
" 98,	plainer Style, without Slide. Steel Bronze,	"	15.00
" 99,	" " " " no Shade. Steel Bronze,	"	12.00

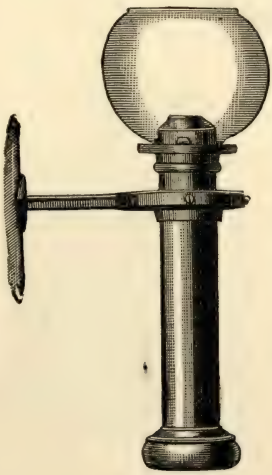
BRACKET LAMPS.



No. 100.

No.		Price.
100,	10 in. Shade. Smoke Bell at top, - -	$5.25
101,	9 in. Shade. Smoke Bell at top, - -	4.50
102,	Small State Room. Smoke Bell at top, -	2.50

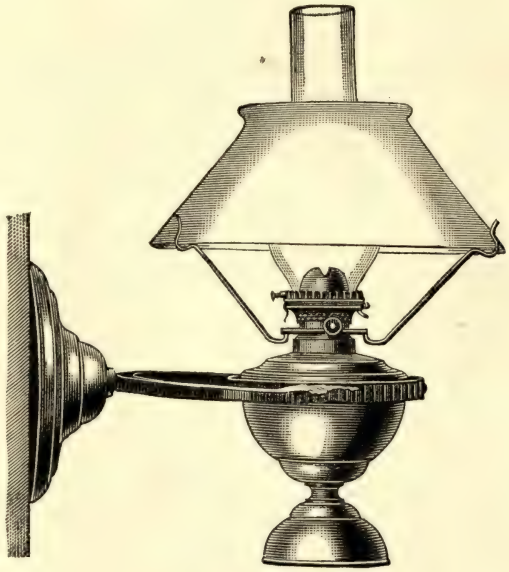
SWIVEL CANDLE BRACKET LAMPS.



No. 108.

No.		Price.
108,	Large Size, Nickel, Length 9 in., Large Candle, - -	$8.00
109,	Large Size, Brass, Length 9 in., Large Candle, - -	6.50
110,	Small Size, Brass, Length 9 in., Small Candle, - -	3.75

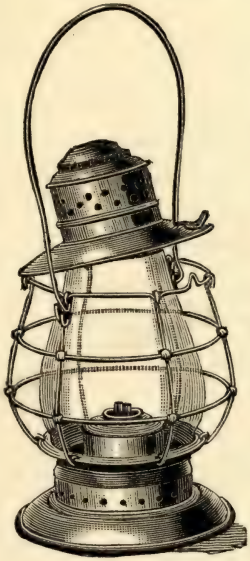
BRACKET SWIVEL CABIN LAMP.



No. 103.

No. 103,	10 inch Shade.	No Smoke Bell, -	Price, $9.00
" 104,	Small Cabin.	" " " - -	" 2.00
" 105,	Smaller Cabin.	" " " -	" 1.88
" 106,	Small Forecastle Swivel Lamp.	Tin.	" .80

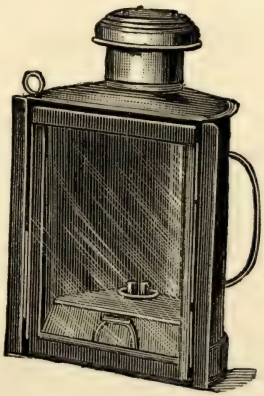
SIGNAL AND DECK LANTERNS.



No. 117.

NO.		PRICE.
111	Signal, 10 in. Globe, *red*, Brass, Bail at bottom,	$10.00
112	Signal, 10 in. Globe, Galvanized Iron or Zinc,	7.50
114	Signal, 6 in. Globe, Iron and Zinc,	2.25
115	" 5 " " " " "	1.90
116	" 5 " " Brass,	3.00
117	Deck Lantern, Brass,	2.00
118	" " Tin,	.95

HALF ROUND BINNACLE LAMPS.

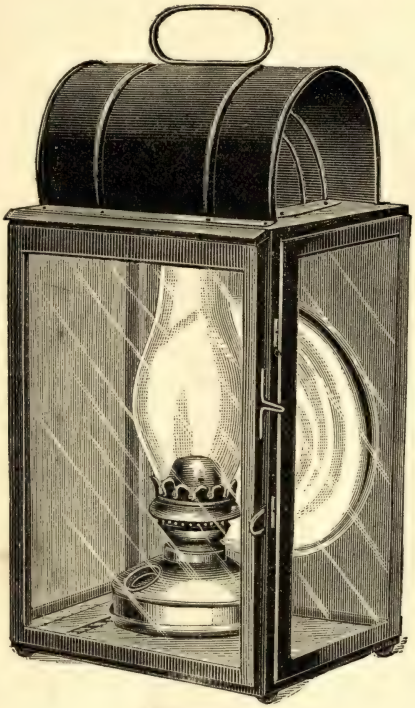


FOR PILOT HOUSE.

Brass.

No. 119,	Large Size,	each,	4.00
" 120,	Small "	"	3.50
Baby	"	"	3.50

BULK HEAD LANTERNS.



No. 125.

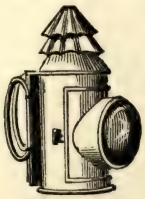
No.		Price.
124,	Best Galvanized Iron with guards,	$7.50
125,	Tin, No. 2, no guards,	5 00
126,	Tin, No. 1, no guards,	4.25
127,	Tin, No. 0, no guards,	3.75
128,	Brass, No. 2, no guards,	9.00
109,	Brass, No. 1, no guards,	8.00
130,	Brass, No. 0, no guards,	7.50

WICK TRIMMERS.

No. 131.

Best, - - - 55c.

BULLS EYE LANTERNS.

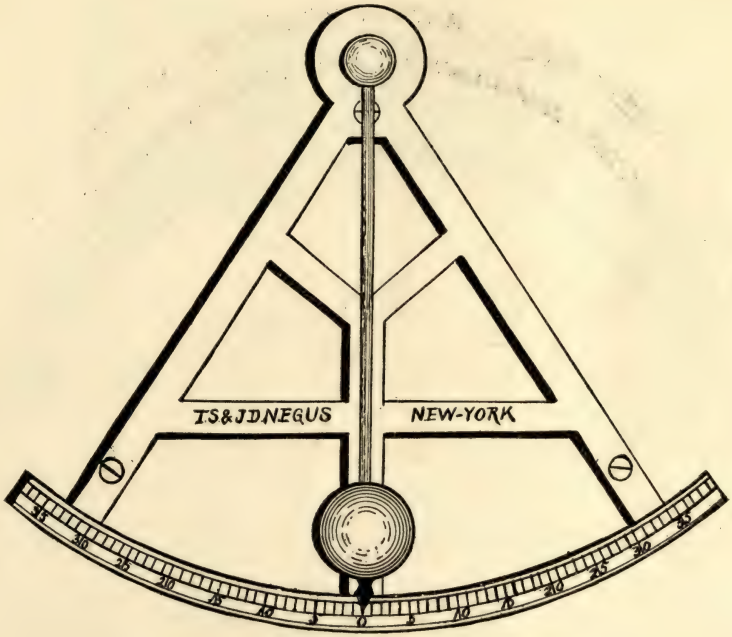


No. 132.

No.		Price.	
132,	Brass, -	$2.50	each.
133,	Tin, - -	.60	"

CLINOMETERS.

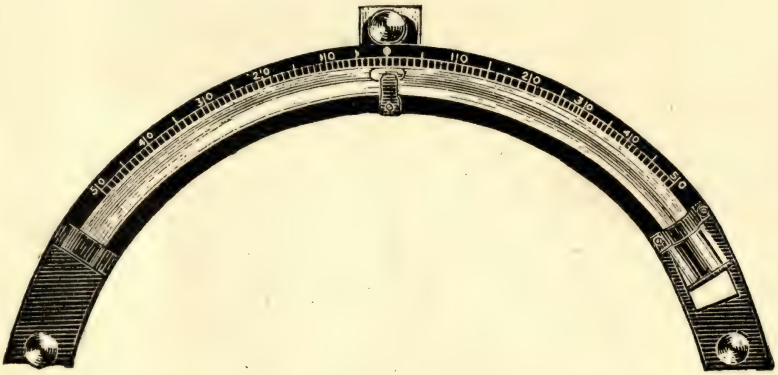
For Showing Heel or List of Vessels.



Made in Brass, highly polished and lacquered.

	PRICE.
Small Size, suitable for Yachts and Small Vessels, -	$13.00
Large " " " Large Steamers, - - -	23.00
6 in. Clinometer, round bronzed case, metal dial, two registering hands or markers, - - - -	$15.00

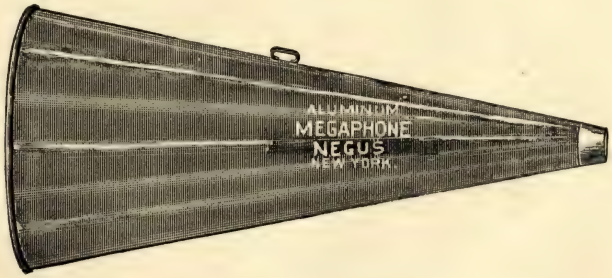
SPIRIT LEVEL CLINOMETER.



This the most accurate and reliable Clinometer made.

PRICE, - - $25.00.

MEGAPHONES.



SPEAKING RANGE ONE MILE.

USEFUL, INTERESTING AND OF GREAT ADVANTAGE LOCATING

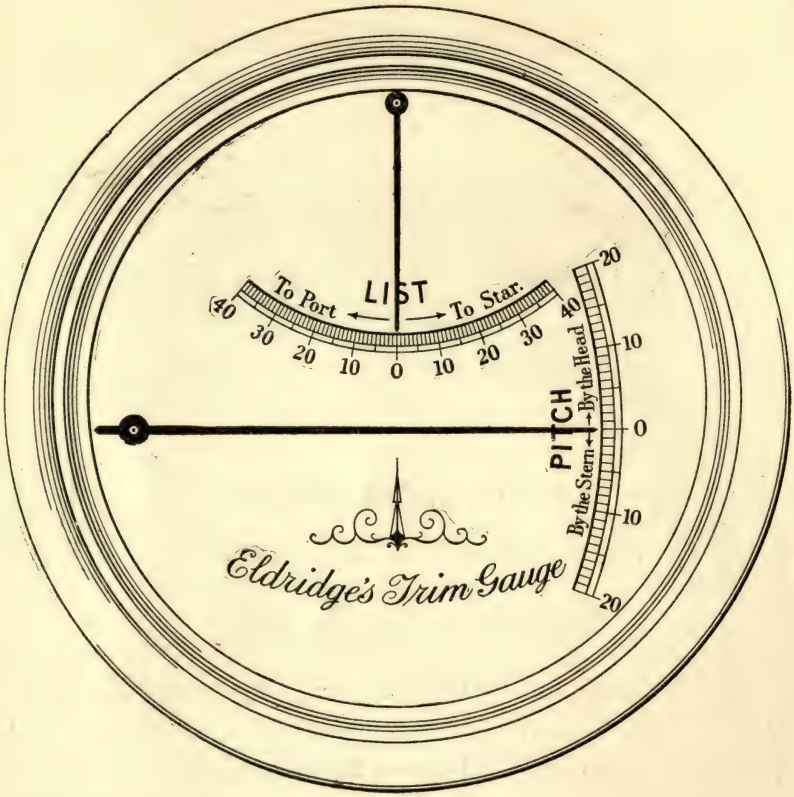
SOUNDS IN A FOG.

No. 1.	15 inch, for short range,	- - - -	$1.50
No. 2.	30 " - - - - - - - - -		2.50
No. 2½.	34 " (Special size for Yachtsmen,)	-	3.00
No. 2½.	35 " (In Aluminum,)	- - - -	8.00
No. 3.	40 " - - - - - - - -		3.50
No. 4.	56 " - - - - - - - -		5.00
Stand for No. 3 or 4,		- - - - - -	2.50

In ordering, specify whether for No. 3 or 4.

Voices and other sounds from a distance which would otherwise be inaudible, can be heard with great distinctness when using the instrument for a receiver.

ELDRIDGE'S TRIM GAUGE.



This instrument is designed to be placed in the cabin, pilot house, or engine room of a vessel, and when properly fastened to the wall or bulkhead will show **exact trim, or the slightest deviation from it.**

IT IS PRACTICAL, SIMPLE AND DURABLE.

4 inch gauge, complete, in box, - - - - - $10.00

5 " " " " - - - - - - 12.00

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Yacht crews uniformed at shortest notice according to Club regulation.

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First-Class Wharf Accommodations.

Vessels taken up on any of the Docks and Railways in New York or Brooklyn.

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AND

THE HIGH SPEED

SOLANO STEAM ENGINE.

(The Patent Solano Steam Engine Attached to the Shaft of the Blackman Air Propeller.)

CAN BE OPERATED EITHER IN
VERTICAL OR HORIZONTAL POSITIONS
AND AT
ANY SPEED TO MEET VARYING CONDITIONS

STEAMSHIP VENTILATION.

AN ESTABLISHED FACT.

Positive and adequate ventilation of steamships has been a want long felt, not only by passengers or those engaged in the exportation of cattle, but also by the managers of lines, in whose efforts in competition to provide the best accommodations to secure their maximum share of the carrying trade, the desirable feature has been carefully considered.

Dependence upon natural means has but feebly supplied the needful elimination of foul and introduction of pure air, and the *ordinary* mechanical means have been found cumbersome and impracticable, owing to the necessity of transmitting power from the main engine rooms to some distant parts of ships by means of shafting, pulleys, belting, etc., through valuable or contracted space, or the erection of small engines directly underneath the ventilators, and situated frequently in awkward or inaccessible positions for their proper care,

THE BLACKMAN AIR PROPELLER

requires no special words of commendation. Its merits have long been established in multitudinous and trying services in all sections of America and Europe, and now by its combination with the

Solano Direct Acting High Speed Engine

its practicability for Steamship service has been demonstrated in its continuous operation in nearly a score of vessels of the

ALLAN R. M. S. S. CO.,
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HANSA NORTH GERMAN LLOYD CO.,
ATLAS STEAMSHIP CO.,
STATE LINE,

AND IN NAVY VESSELS OF SEVERAL NATIONS,

and many Coastwise and River Lines of the United States.

The Engine and Propeller combined occupy practically no valuable space, as they are placed *inside* of the Air Ducts existing in all ships, and can be erected for vertical or horizontal operation without obstruction to the ordinary passage or working ways of the vessel.

THE NECESSITY OF STEAMSHIP VENTILATION

IS OFTEN FELT by companies and masters, whether passenger, cattle or carriers employed in transportation of perishable goods or such as may suffer deterioration from the unwholesome condition of atmosphere prevailing under deck

THE BLACKMAN-SOLANO COMBINATION

HAS BEEN ADOPTED AS A REMEDY BECAUSE

CAREFUL STUDY AND PRACTICE MEANS SUCCESS.

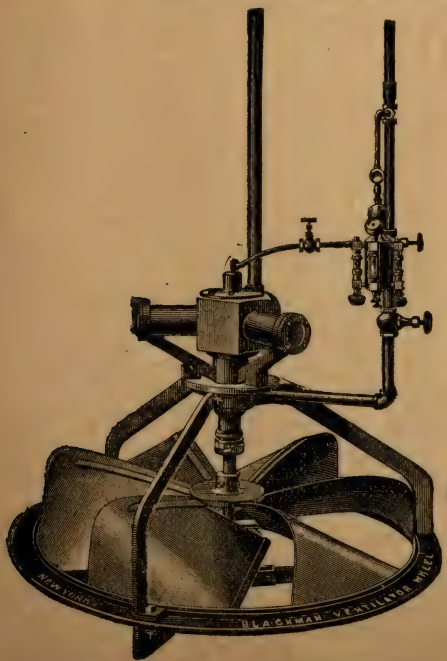
POSITIVE,
EQUALIZING,
RADICAL,
FAVORITE,
ECONOMICAL,
CORRECTIVE,
TRIUMPHANT,

STANDS THE BLACKMAN-SOLANO STEAM VENTILATOR.

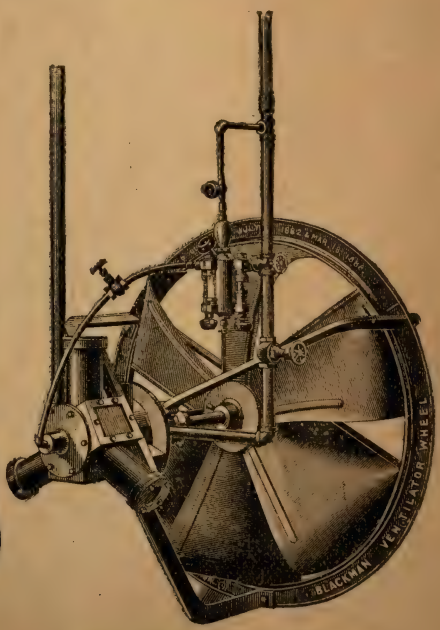
PERFECT IN EVERY REQUIREMENT.

SPEED GOVERNABLE AT PLEASURE TO MEET VARYING CONDITIONS.

THE FOLLOWING CUTS SHOW THE POSITION AND STEAM CONNECTION OF THE UP-DROP DOUBLE SIGHT-FEED LUBRICATOR TO THE SOLANO ENGINE ATTACHED TO THE BLACKMAN.



THE BLACKMAN SET HORIZONTAL.



THE BLACKMAN SET UPRIGHT.

THE SOLANO ENGINE

AS APPLIED

TO THE PROPULSION OF SMALL CRAFT.

ITS QUALITIES OF

SIMPLICITY, CONCENTRATION, ECONOMY

AND

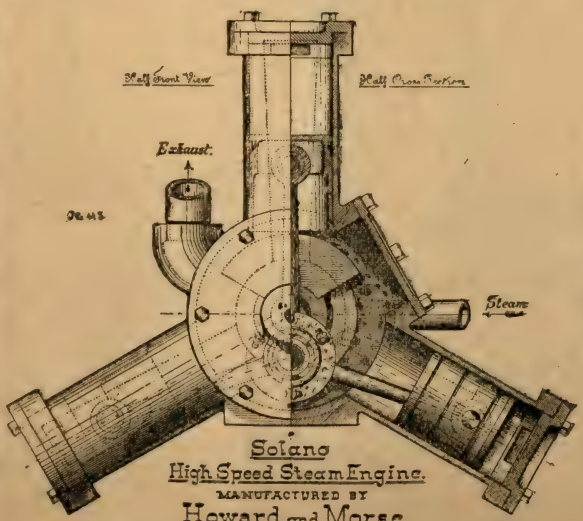
DURABILITY

EMINENTLY ADAPT IT FOR SUCH SERVICE.

POSSESSING THESE FEATURES:

Simplicity of construction. Fewer parts than any other engine of this type. Less weight than any other engine of the same power. Economy of space. Economy of steam, working it expansively. More even distribution of power than any other engine. Steam always working at its best. More perfect lubrication than any other engine with all its working parts enclosed. All connections enclosed and protected from dust. Perfect drainage. No keys, bolts, straps, etc., to get loose. Noiseless in operation. No dead points. Always ready to start. Entire lubrication done automatically. Can be run at high speed without fear of destruction. Perfect balance guaranteed. Parts interchangeable. No packing device to be looked after. Wear upon crank-pin connection adjusted without taking engine apart. Oil forced direct to crank-pin by steam pressure. Cylinders perfectly relieved from condensed steam.

SHOWING HALF FRONT VIEW AND HALF CROSS SECTION.



PATENTED.

Solano
High Speed Steam Engine.
MANUFACTURED BY
Howard and Morse
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UNIFORM OUTFITTER.

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FRANKLIN "L" STATION IS THE NEAREST.

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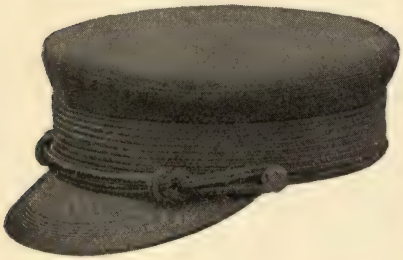
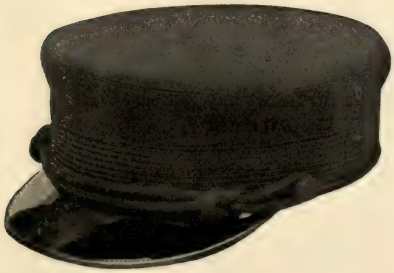
Seawanhaka Yacht Club.



Larchmont Yacht Club.

Bayshore Yacht Club.



Hempstead Bay Yacht Club.

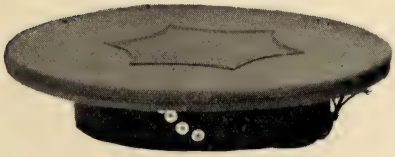
PRICE $2.50 EACH.

162 & 163 South Street, New York.

HOWARD PLACE,

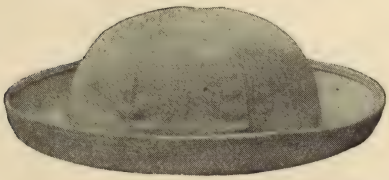
162 & 163 SOUTH STREET, NEW YORK.

Star Top Sailor Cap.



Price, $1.50.

White Duck Navy Hat.



Price, 50 cents

Fast Blue. Price, $2.50.

White Duck Jumper.

Jumper or Pants. 75 cents each.

Navy Watch Cap.

Price, 50 cents.

HOWARD PLACE.

CORRECT CLUB UNIFORMS.

Sailor Pants, Shirts, Caps, Shoes, and Naval Reserve Uniforms Always on Hand.

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NEW JERSEY

SPECIAL EXTRA BRIGHT

Red Copper Paint,

FINELY GROUND. FOR YACHTS.

LARGEST MANUFACTURER OF

MARINE PAINT SPECIALTIES

IN THE WORLD.

NEW JERSEY

- ANTI-CORROSIVE PAINT—Priming Coat.
- ANTI-FOULING COMPOSITION—Finishing Coat FOR STEEL AND IRON VESSELS.
- COPPER PAINT.
- RED COPPER PAINT—For Yachts, very bright.
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- YACHT BLACK.
- YACHT WHITE.
- MAST PAINT.
- SMOKE-STACK PAINT.
- SHIP AND DECK PAINT.

Our productions are absolutely the best. We make no Cheap or Inferior Goods.

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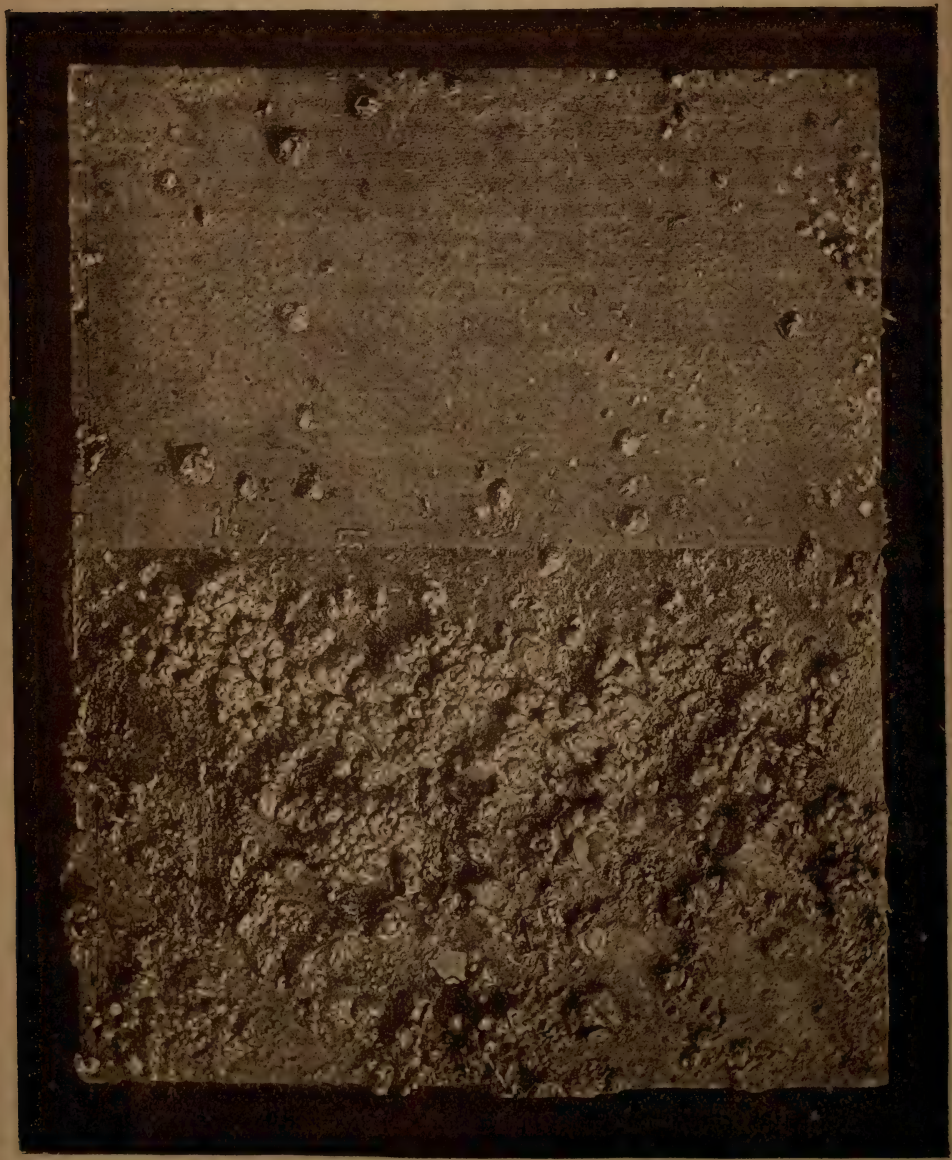
Corner Wayne and Fremont Streets, JERSEY CITY, N. J.

NEW JERSEY
ANTI-FOULING COMPOSITION
FOR STEEL AND IRON VESSELS.
WONDERFUL TEST.



TRADE MARK.

New Jersey Copper Paint

LEADS THEM ALL.

Highest Medals from American Institute, New York City.

BEING FINELY GROUND IT IS EASY TO APPLY.

The success attending the introduction and sale of NEW JERSEY COPPER PAINT has been very remarkable. No other Copper Paint ever received such a rapid introduction. Its guaranteed quality, FIVE POUNDS OF COPPER TO EACH GALLON, its fineness, and being easy to apply, has made it greatly liked. It is of such a consistency (not being too thick or too thin) that it freely enters the wood, and at the same time it has body enough to produce a coating on the outside. In its double capacity it so poisons the wood that the worms will not enter, and its coating outside protects it from barnacles, grass, etc.

My long experience in this line has enabled me to produce a Copper Paint that can be justly said of it: "It Leads Them All."

THE LARGEST MANUFACTURER OF MARINE PAINT SPECIALTIES IN THE WORLD.

EXTRA BRIGHT

Special Red Copper Paint for Yachts.

MANUFACTURED BY

NEW JERSEY PAINT WORKS,

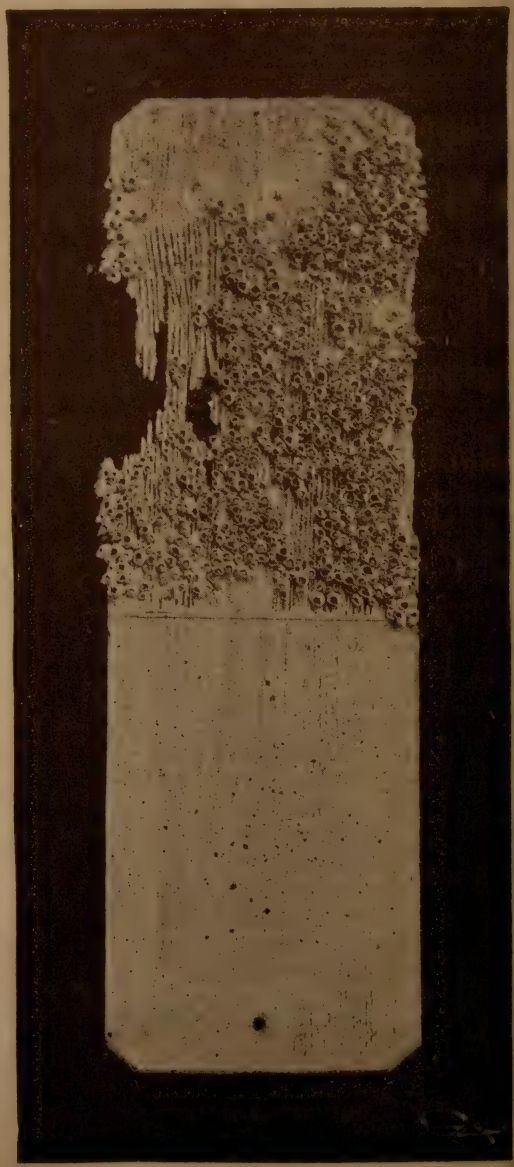
HARRY LOUDERBOUGH, PROPRIETOR,

JERSEY CITY, N. J., U. S. A.

New Jersey Copper Paint

LEADS THEM ALL,

SO OUR TESTIMONIALS SAY.



REMARKABLE FACT.

THIS cut is a copy of a photograph of a board having one end painted with **NEW JERSEY COPPER PAINT,** manufactured by Harry Louderbough, proprietor of NEW JERSEY PAINT WORKS, Jersey City, N. J., and placed in the water at Port Royal, S. C., for five months. Upon the unpainted end you can note the ravages of the salt water worm so destructive to wood, and also the large number of barnacles that have fastened upon it. Observe the painted end, where **New Jersey Copper Paint** was applied—its splendid condition.

The board here represented was placed in the water at Port Royal, S. C., by me, and left in the water five months. The painted end was as good as when it was placed in the water.

MILLS EDWARD,
Master Schooner "Florence Shay."

SEE HYDRO PNEUMATIC ASH EJECTOR. AIR AND GREASE EXTRACTOR. EVAPORATOR AND FEED WATER HEATER. WATER TUBE BOILER.

1. Hydro-Pneumatic Ash Ejector.

Avoids dust and noise. Saves coal. Lightens labor, Prevents injury to paint. More than 500 now fitted and in use. Over 100 fitted in 1898. Can be fitted with Trewent's safety cock, or automatic valve. Bends can be furnished fitted with Taylor's supplementary jet.

2. Air and Grease Extractor.

Prevents grease in boilers. Does not reduce temperature of feed water. Can be quickly cleaned. In use on S. S. "El Rio," "Morgan City," etc.

3. Evaporator and Feed Water Heater.

Rapid in its work. No pump required. Coils readily shed all deposit. Of light weight. In use on S. S. "El Norte," "Louisiana," Yacht "Almy," etc.

4. Water Tube Boiler.

Straight sub-vertical tubes of small diameter. Safe, light and durable. No cast metal. Combined induced and forced draft. In successful operation on Yacht "Electra" for two seasons.

5. Russell-See Running Light Indicator.

Adopted by White Star Line, Morgan Line, etc.

6. Russell-See Controlling Device for Electric

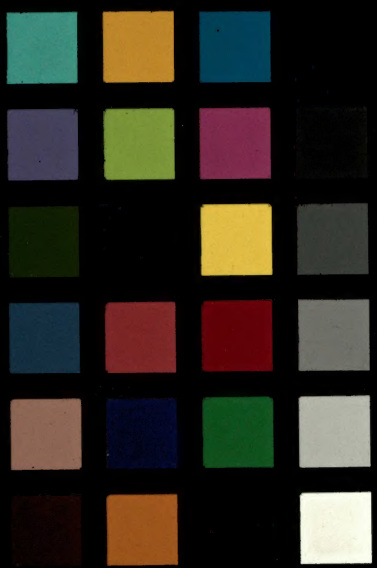
Motors, applied to the turning of turrets on warships, or the moving of rudders or guns, or signal apparatus of any kind, etc.

ALL PATENTED IN THE UNITED STATES.

The Ash Ejector, Boiler, Running Light Indicator, Evaporator and Controlling Device are patented abroad.

In order to avoid infringement apply to

HORACE SEE,

No. 1 Broadway, - - - NEW YORK.

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